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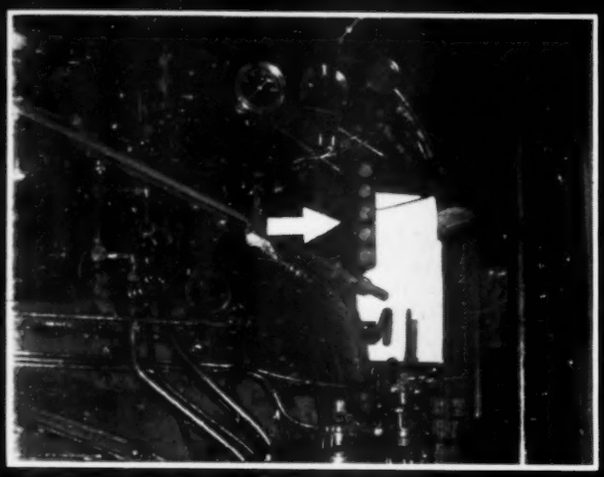
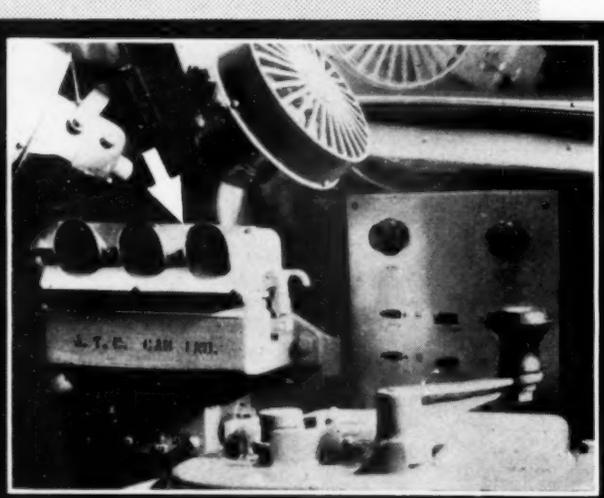


Cab Signal in Steam Locomotive

Cab Signal in Multiple-Unit Car



Cab Signal in Streamliner

"From a Train Operation Point of View,

The

CAB SIGNAL

is the

IDEAL SIGNAL"--

—because it is immediately responsive to changes in conditions ahead of the train and it is in the cab in plain view of the engineman where its indication will not be obscured by smoke, snow, fog or other unfavorable weather conditions and where it cannot be misunderstood.

Shall we furnish detailed information about "Union" Coded Continuous Cab Signals and why they are ideal signals from a train operation point of view?

UNION SWITCH & SIGNAL COMPANY
SWISSVALE, PA.

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RAILWAY AGE

Government, Business and the Railroads

The Chamber of Commerce of the United States will hold its annual meeting in Washington next week. The general subject of its program will be "The Key to Recovery." The Chamber is supposed to represent and have for its purpose the improvement of all business. Its program includes a discussion of "urgent transportation needs." Within the last year it sponsored a Transportation Conference the attitude of which has illustrated something of great importance—viz., the economic inconsistency or ignorance of many business men, which has been one of the principal causes of the depression and obstacles to recovery. The railroads are seeking what all business, especially Big Business, claims to be seeking—viz., fair and equal government treatment of all business which necessarily includes fair and equal government treatment of the railways and their competitors. But the Transportation Conference refused to advocate any changes in present government policies plainly discriminating against the railways and in favor of their competitors.

The Chamber's program includes a discussion of "keeping the facts of business before the public." Do business men believe it will help improve the relations of business with the public to have it demonstrated to the public that many business leaders are either ignorant regarding the economic policies necessary to promotion of the public welfare, or inconsistent to the point of dishonesty in promoting economic policies the absolute negation of the economic principles and policies for which they profess to stand?

"A Study of Depressions"

The National Association of Manufacturers recently has published "A Study of Depressions" prepared by one of its committees, which, the introduction says, "had the benefit of the advice and assistance of a number of economists especially qualified in the field of business cycles." This "Study of Depressions" is one of the best and soundest presentations of economic facts, principles and policies ever prepared and published. It shows conclusively, as the *Railway Age* repeatedly has pointed out, that recovery began in every leading country in the world in the latter part of 1932; that in the United States it was interrupted, and has since been prevented, by economic policies, especially government policies, that began to be adopted in 1933; that in 1937 there had been less recovery in the United States than in almost any other important country, excepting France; and that, owing to the "recession," production and employment in this country were relatively smaller in 1938 as compared with 1929 than in any other leading country.

Statistics of the League of Nations cited show that in April, 1938, industrial production in the United States was 35 per cent less than in 1929; in France 21 per cent less; in Italy about the same as in 1929; in Great Britain 14 per cent larger than in 1929; in Norway 23 per cent larger; in Germany 24 per cent larger; in Sweden 46 per cent larger; in Japan 75 per cent larger, and so on. The "Study of Depressions" sets forth the reasons why the United States has lagged so terribly; "the most important conditions which have prevailed in previous periods of prosperity in the United States;" and "conditions necessary for sustaining prosperity once recovery is attained." The *Railway Age* agrees entirely with all the statements from experience and the specific policies advocated for restoring and maintaining prosperity.

Manufacturers' Views Regarding Government and Business

Among the examples of "unsound business regulation" in this country cited are the following: "An attitude toward public utilities, both with regard to financing and *tax-subsidized government competition*, [italics are ours] which has enormously slowed up expansion in a vital part of our national economy." . . . "Continuing and increasing government competition, and threats of competition, with private business." Why, it may well be asked, were not the railroads mentioned along with public utilities, in the reference to "tax-subsidized government competition," as this statement as well as the more general statement regarding "continuing and increasing government competition, and threats of competition," are even more applicable to the railroads than to public utilities or any other industry?

Among the most important conditions mentioned as having prevailed in periods of prosperity in the United States are the following: "(1) Absence of governmental activity which prevents the effective functioning of

private enterprise. (2) Government regulation limited to promotion of *fair competition and equal opportunity* [italics are ours] in the field of competitive enterprise." In no field has there been within recent years so wide a divergence from these former government policies as in the field of transportation.

Among the conditions stated as "necessary for sustained prosperity after recovery is attained" are the following:

(1) "Recognition that private business cannot compete on equal terms with government-subsidized industry, and that the undertaking of such competition by government discourages private industry, diminishes employment, and thus tends to prevent sustained prosperity".

(2) "Where government engages in business activity all aspects of value should be fully considered at all times, *with all elements of total cost properly calculated and allocated,* [italics are ours] including capital charges, taxes, and other costs which private industry would have had to pay, and with such costs publicly reported".

(3) "Restriction of government expenditures, including federal, state and local, within government income, and maintenance of reasonable relation between government income and national income".

Manufacturers' Principles Applied to Transportation

Statement (1) is equivalent to a declaration that present government policies affecting transportation discourage private industry, diminish employment and "thus tend to prevent sustained prosperity." Statement (2) is equivalent to a declaration that "all elements of total cost" of water, highway and air transportation, including, of course, government expenditures of taxes that help provide such transportation, "should be fully considered at all times," and so "allocated" that those using public property in carrying on commercial transportation will pay "all elements of total cost" incurred in rendering their service as the railways do. Statement (3) is equivalent to a declaration that all government expenditures, federal, state and local, on waterways, highways and in aid of airways should, along with other government expenditures, be restricted within government income in order that there may be "maintenance of reasonable relation between government income and national income."

In publishing and disseminating its excellent "Study of Depressions" the National Association of Manufacturers purported to be speaking for all its members, if not for all manufacturers. But do all manufacturers, or even all the association's members, consistently accept and act in accordance with its statements of fact, and its declarations of principle and policy, regarding the causes of depression and the essentials of recovery and prosperity? By no means.

Business Interests that Repudiate Their Own Avowed Principles

As regards transportation, many of them repudiate every statement of economic fact and every declaration of principle and policy made by their association.

They criticise railway management upon the ground that it should be seeking reduced regulation of railways instead of increased regulation of other carriers. At the same time they resist every effort to secure either increased regulation of other carriers or reduced regulation of railways. In some states lobbies representing highway transportation recently have been actually promoting legislation to limit the length of freight trains and increase the size of train crews for the purpose of increasing railway operating costs and, thereby, the competitive disadvantages of the railways. The Chamber of Commerce of the United States failed to get a referendum of two-thirds of its members in favor of reducing railway regulation by repeal of the long-and-short-haul clause of the Interstate Commerce Act. The traffic managers of most industries are opposing changes in the rate-making rule of the Interstate Commerce Act which would in effect reduce railway regulation by giving railway management more latitude in fixing rates. Many business interests are strongly opposing regulation of water carriers by the Interstate Commerce Commission.

In other words, a large part of business is opposing for transportation the very kind of government regulation for business expressly advocated by the National Association of Manufacturers—viz., "government regulation limited to promotion of *fair competition and equal opportunity* [italics are ours] in the field of competitive enterprise."

Well, then, how about "recognition that private business cannot compete on equal terms with government-subsidized industry"? How about consideration at all times of "all elements of total cost properly calculated and allocated" where government engages in "business activity"? How about "restriction of government expenditures" on waterways and highways to help keep total government expenditures "within government income" and in "reasonable relation with national income"? With regard to transportation, many important Big Business interests are strongly opposing every one of these policies. And foremost among the Big Business interests opposing them are many of the biggest manufacturers in the country. The application of these policies to transportation would be in the public interest and only fair to the private enterprise of railroading. These Big Business interests are opposing it because it would deprive them of unfair advantages they are now enjoying at the cost and to the disadvantage of the railroads, of competing small business and of the entire taxpaying public.

Business Should Become Honest with Public

The Chamber of Commerce of the United States, the National Association of Manufacturers and numerous other business organizations are carrying on propaganda to convince the public that private management of business, and especially Big Business, is not only efficient but fair, and asks from government only treatment that will enable the entire system of private en-

terprise to survive and function in the public interest in accordance with the sound economic principles of private enterprise, otherwise called "capitalism." As long as so many and such powerful business interests support the transportation policies that they do, any spokesman of business who knows the facts and represents to the public that *all* business asks from government only fair, equal and economically sound treatment of all business, is a liar and the truth is not in him.

It is high time that the large majority of business men who really believe in the system of private enterprise, and who criticise the New Deal for undermining it, should begin trying to make honest the powerful minority of business interests that, for their own selfish purposes, and plainly contrary to the public welfare, support for transportation exactly the same kind of government policies the application of which to other kinds of private enterprise they loudly oppose. Business probably cannot and should not be allowed to convince the public there is nothing wrong with private enterprise in the United States as long as a large part of business stubbornly, selfishly and hypocritically advocates ruining the private enterprise of railroading with the same kind of government policies which it opposes being applied to itself upon the ground that their tendency is to ruin and destroy private enterprise.

A Fair Deal in Grade Separation Costs

In one respect at least the efforts of the railroads to obtain fair treatment from governmental agencies are meeting with some measure of success. The reference is to their efforts in some states to obtain equitable and workable substitutes for existing antiquated statutes and regulations requiring them to share heavily in the costs of highway-railroad grade separation structures. Recognition of the inherent injustice of imposing on their already strained finances large proportions of such costs has been slow to come, but having made its appearance in several important states, there is sound basis for the hope that corresponding relief will be forthcoming in other states, assuming that they are alive to the situation and to the opportunities for action that it affords.

In the majority of states the allocation of grade-separation costs is based on the purely arbitrary rule that the railroads should be required to pay 50 per cent or more of such costs, notwithstanding the fact that the primary objective of separating grades is to promote the safety and convenience of the private motorist, and, incidentally, the competitors of the railroads on the highways. So long as the finances of most railroads were not in an altogether desperate condition, state commissions could order the separation of grades on the basis of heavy railroad participation and, being denied court relief in most instances, the roads had no alternative but to draw on their dwindling treasuries to comply with such orders.

However, the onset of the depression, with its disastrous effect on railroad finances, brought fundamental changes in the picture. State commissions could, and did, continue to issue grade separation orders, but because of the financial exhaustion of the railroads they were, in most cases, unable to contribute the disproportionate share of the costs demanded of them, with the result that, while commission orders continued to accumulate, actual construction dwindled almost to a standstill.

Thus, with state bodies refusing to recognize the actualities of the situation, conditions continued in a stalemate until the federal government included grade separations as an essential phase of its "pump-priming" program. Another development was the favorable decision of the United States Supreme Court in the Tennessee case. With these developments as an entering wedge, and largely through the influence of public-spirited citizens, the railroads of the State of New York, recognizing that the time was opportune for such action, succeeded in having adopted a constitutional amendment reducing the railroads' proportion of grade separation costs from 50 per cent to a maximum of 15 per cent, the actual figure to be based on the net benefits accruing to the carrier.

With the passage recently by the state legislature of an enabling act, the amendment has now become law—and the beneficial effects on lagging construction activity are expected to become noticeable almost immediately. In fact, as a direct result of passage of the enabling act, a total of $178,000,000 (the balance of a state bond issue) will be released for financing grade separations, and it is estimated that upwards of $50,000,000 of this amount will enter the active stage almost immediately. Thus, the State of New York, by discarding the former arbitrary rule of allocating grade separation costs in favor of one that takes cognizance of fundamental changes in the relative status of the railroads and the highways, has taken a step that will result in a general revival of an important branch of construction activity—a revival that will have a stimulating effect on employment and business activity within the state.

Progress is also being made in other states. In Ohio a bill is now under consideration by the legislature that would reduce the proportion of grade separation costs borne by the carriers from 50 per cent to a flat rate of 15 per cent. In Indiana an existing bill limiting the participation of the railways to 20 per cent has been extended to include projects in municipalities, while in Pennsylvania, Michigan and Delaware bills have been introduced in the legislatures that would reduce the mandatory participation of the railroads to a maximum of 15 per cent on a net-benefit basis.

All this activity is encouraging, but much remains to be done, especially in states where the movement has not yet gained headway. And the situation regarding this particular matter may never again contain so many elements favorable to the railroads. Thanks to the

efforts of the railroads in New York and other states, the subject is a live one today and the movement has gained a momentum that should be utilized to the utmost. Without meaning to suggest that the present state of railroad finances is beneficial, it should at least be pointed out that it can be used now as an effective argument in their attempts to secure better treatment in many states. Even where politicians may be entirely deaf to presentations based on the moral rights of the railroads, they cannot disregard the impossibility of forcing them to spend money they don't have for projects that are essentially public improvements.

Finally, with so many factors in their favor, the roads should not be too hasty in accepting inadequate relief. In a number of states careful studies have been made to determine the net benefits that have accrued to them from grade separations, and in most instances it has been found that such benefits have amounted to less than 10 per cent of the cost of the projects on a state-wide basis. Obviously the most desirable and equitable arrangement is one requiring them to share in the costs of grade separations only to the extent that they are benefited.

In short, if the railroads are to make the best of the present favorable factors in the situation, it behooves them to intensify and broaden their efforts now to the end that remaining inequities in the allocation of grade separation costs shall be eliminated.

What Will the Traffic Bear?—11

As if outmoded pricing methods were not a sufficient handicap in meeting truck competition, the railroads freight rate increases on competitive traffic last year saved many trucks from bankruptcy and many others from greatly curtailing their operations. Now, thanks to the railroads, even the overexpanded and otherwise uneconomical truckers are making money.

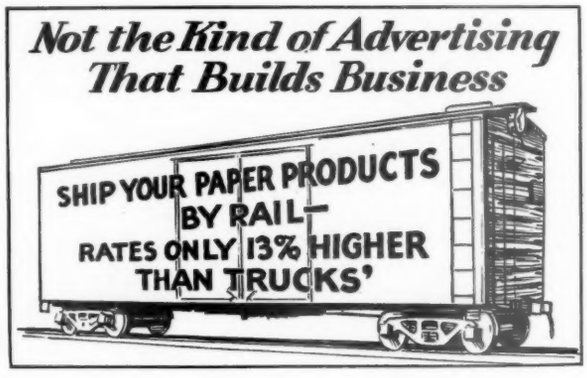
For instance, the evidence in the Central Territory Case (M.C.21) shows it costs the average truck in merchandise service $179 to operate a round-trip distance of 600 miles (300 miles one way) and that average loadings are 6½ tons. If this truck handles *average* merchandise traffic, even today it will average only $174 per round-trip, but if it handles first class traffic it will receive $249 for the round-trip. **If there had been no increase and if class rates were revised so each commodity would pay a profit above its cost of handling, the average truck operating 300 miles would earn only $160, and hence would lose $19 each trip.**

Generally speaking, merchandise movement is in one direction, from the larger to the smaller cities and the trucks must bid for low-rated traffic to get return loads. This fantastic method of pricing plus the increase in railroad rates enables the trucks to handle profitably as a return load at the rail carload rates any commodity that can be loaded in a standard truck body; oftentimes the truck can afford to charge materially less than the rail rate.

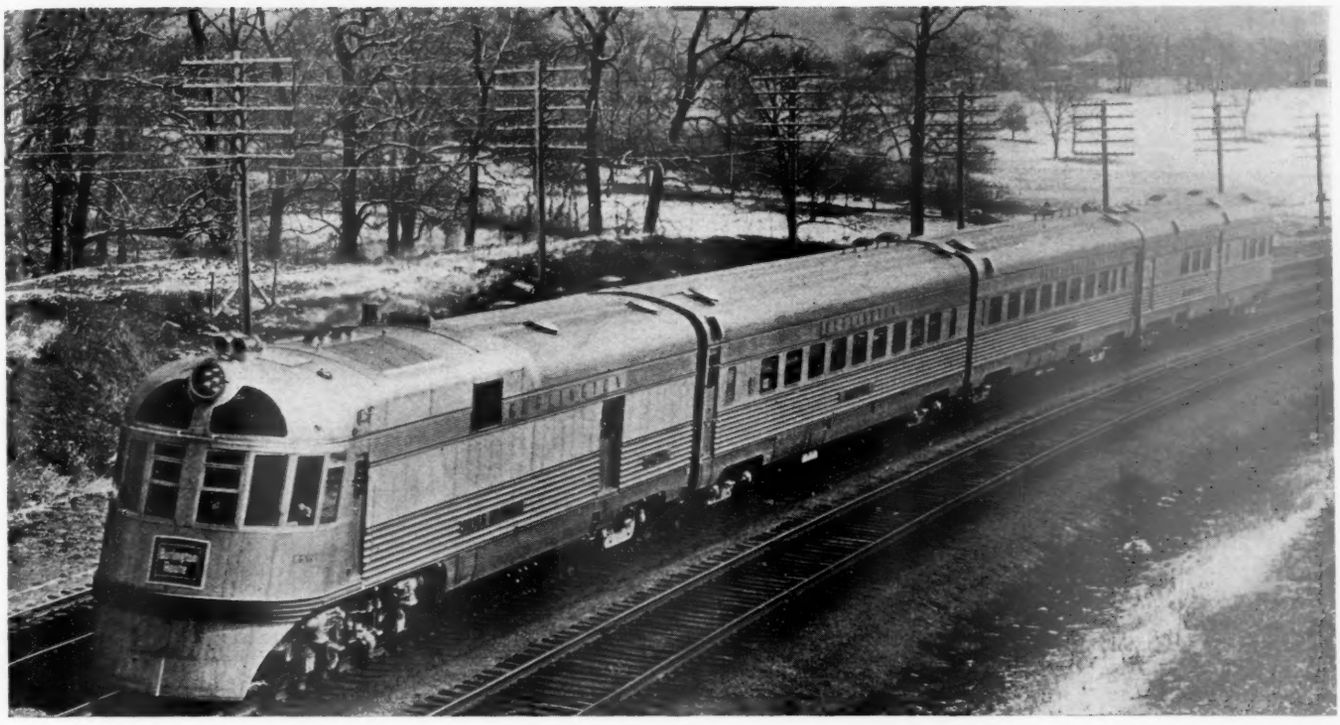
For example, present rail rates enable trucks to handle profitably paper and paper articles from Hamilton, O., to Chicago, 283 miles, for 23 cents per hundred lb., 3 cents under normal rail rates; and to handle scrap paper from Chicago to Kalamazoo, 139 miles, for 11 cents, minimum weight only 10,000 lb. or only $11 for the haul of 139 miles.

The truck tariffs are chock full of such examples. The reason for this is plain. Trucks make their big money on the outbound trip and, if they only gather enough revenue on return loadings to pay for gas, oil and labor, they are ahead—but the public, and the railroads with their more greatly unbalanced traffic, are footing the bill for these uneconomical operations. If the trucks did not have such long profits in their outbound hauls, they could not even operate for these longer distances.

The great majority of the railroad traffic men realize that something needs be done, but they do not yet agree upon what that something should be. Some are trying to meet the situation through the operation of their own trucks. Others have resorted to forwarding operations and "all-commodity" rates (which are in fact open only to a few shippers). Still others seem to believe that further taxation and restriction of truck operations may solve the problem. But no one of these expedients has yet proved greatly effective—and meantime the trucks are continuing daily to make further inroads into railroad traffic. Conceding that the railroads are unfairly handicapped in meeting competition—even if their fondest hopes are realized in correcting this condition, they still will find that continuing to price their product regardless of costs will continue to drive business to their competitors.



If rates were built up on a reasonable basis, the logic and justice of which everybody could understand, the average shipper would lose his fear of being arbitrarily discriminated against. No one would care who owned and operated our transportation facilities and they could then be co-ordinated into an agency where true economy would control. **Who in America gives a hoot who owns the telephones or wants duplicate service in order to preserve competition?**



C. B. & Q. Installs Ninth Zephyr

Diesel auxiliary power plants, fluorescent lighting, and disc brakes are feature installations on the "General Pershing" train

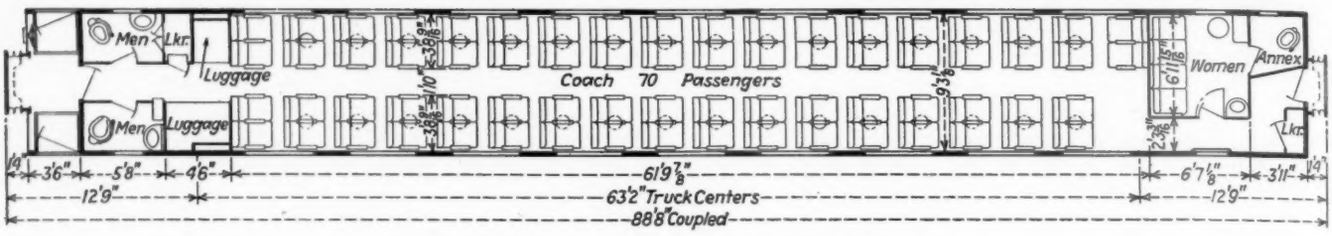
A LIGHTWEIGHT four-car motor train of stainless-steel construction, in which are embodied innovations in the generation of auxiliary power, in the lighting, and in the method of braking, has recently been delivered to the Chicago, Burlington & Quincy by the Edward G. Budd Manufacturing Company. Traction power is furnished by a 1,000-hp. Electro-Motive Corporation Diesel-electric power plant. Each passenger-carrying car is equipped with a Diesel-electric power plant which furnishes energy for car lighting and for the operation of the air-conditioning system, as well as for heating. The illumination is furnished by a complete installation of fluorescent lamps in all passenger-carrying compartments. With the exception of the power truck, all axles are fitted with disc brakes, the shoes of which are lined with composition material, which relieve the rims of the wheels of the braking load.

This train, which has been christened the "General Pershing," goes into service on April 30 between Kansas City, Mo., and St. Louis. It will operate trains Nos. 32 and 33, making a daily round trip of 558 miles. It is scheduled to leave Kansas City at 9 a. m. and arrive at St. Louis at 2 p. m., leaving St. Louis one hour later and arriving at Kansas City at 8 p. m. The running time of five hours covers a distance of 279 miles, including five regular stops and three conditional stops, at an average speed of 55.8 miles an hour. It is anticipated that maximum speeds will seldom exceed 90 m. p. h.

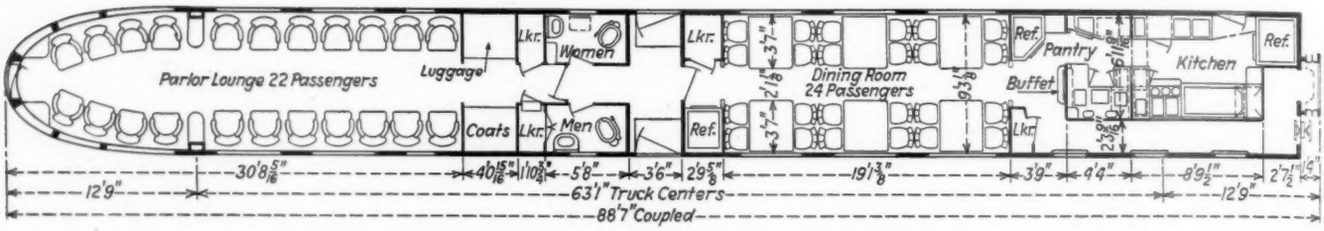
The four-car train provides facilities for daylight runs, with complete dining and lounge service, and with coach seats for 122 passengers. The first vehicle in the train is a motor-baggage car. The engineroom occupies about 26 ft. of space, and in front of it is a roomy operator's compartment. The 40-ft. baggage room occupies the remainder of this car. There are two coaches, the first of which has seats for 70 passengers, with a women's lounge at the front end and two men's toilets placed on opposite sides of the aisle at the rear. The second coach, or the third car in the train, is slightly shorter, seats 52 passengers, and has full men's and women's lounges, one at each end. Each of the passenger coaches has a vestibule at one end only.

The fourth and last car in the train is the diner-lounge. At the front end is a kitchen and pantry, the combined length of which is about 13 ft. The dining room, which is slightly more than 19 ft. long, has three double tables on each side of the aisle, thus seating 24 persons. Back of the dining room there is locker and refrigerator space. The parlor-lounge at the rear end of the car is nearly 31 ft. long and has loose chairs for 22 persons. In front of the parlor-lounge are luggage and coat closets and women's and men's toilets placed on opposite sides of the aisle. The dining and the parlor-lounge units are separated by the entrance vestibule.

Consistent with the naming of the train after General John J. Pershing, the names of the cars in the train are suggestive of a military career. Thus, the power-bag-



The 70-Passenger Coach Has a Women's Lounge



The Lounge-Diner—The Vestibule Is Between the Dining and Parlor Lounge Sections

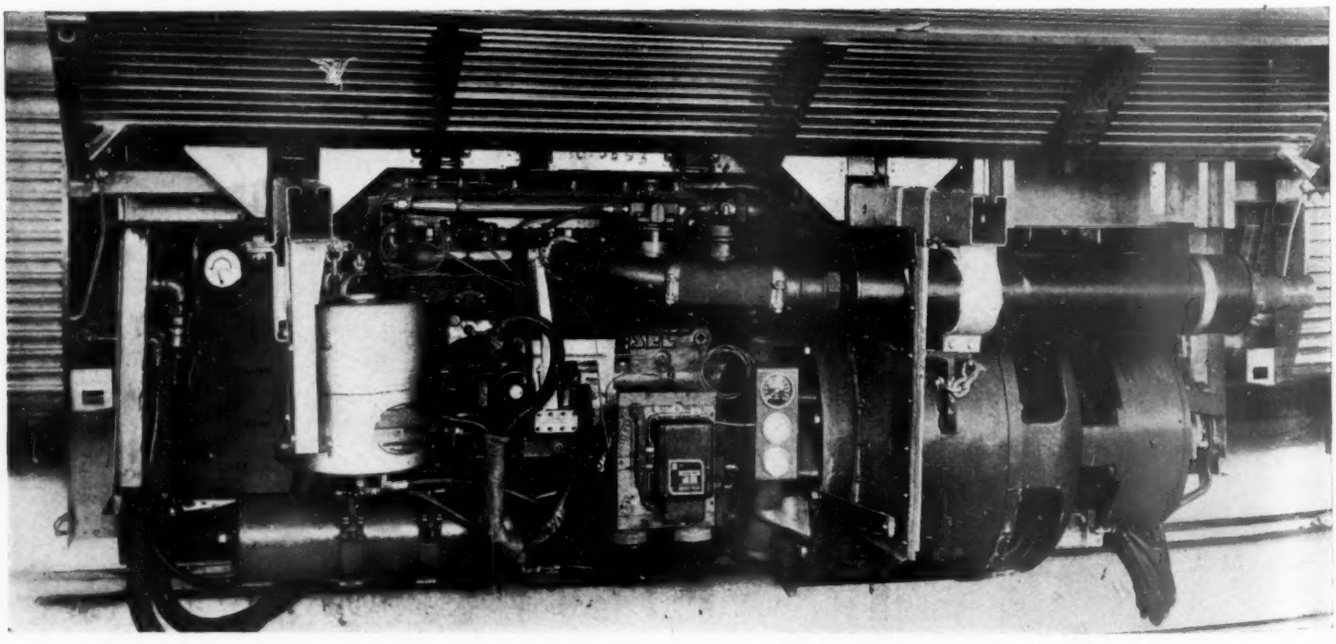
gage unit is designated the "Silver Charger," and each of the passenger-carrying cars bears the name of an emblem of military rank. These are successively, the "Silver Leaf," the "Silver Eagle," and the "Silver Star."

The Car Structures

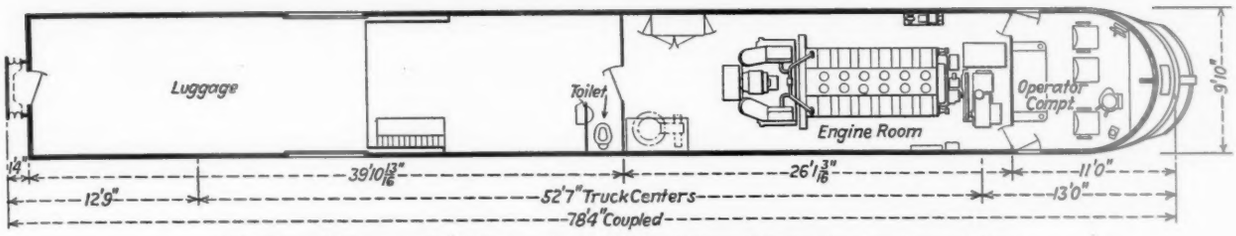
The cars are of stainless-steel construction, the parts of the structure being joined by the Budd Shotweld process. With the exception of the underframe under the power plant, the entire underbody construction is of stainless steel. The frame members are either of drawn or pressed sections. The center sill is built-up of shapes drawn from stainless-steel sheets. It has a cross-sectional area of 12.63 sq. in. The section is symmetrical about both vertical and horizontal center lines, and the line of draft falls on its center of gravity. Externally, the cars follow the characteristics of Budd construction. The roof and skirting are of corrugated stainless steel, the former reinforced inside with flat stainless-steel sheets where needed. The deadlight panels are flat stainless-steel surfaces of soft finish, and the sides below the belt rail are sheathed with highly polished fluted panels. The railroad name appears in black letters on a flat letterboard panel, and the names of the cars appear on similar panels below the belt rail, all of which are welded in place.

The interior lining of the cars is 3/16-in. tempered Presdwood. The frames for the partitions are made up of square or rectangular welded tubes and faced with 3/16-in. tempered Presdwood. In the two passenger cars and in the parlor-lounge there are continuous bag racks of the closed type. The windows are rubber-glazed units with 1/4-in. plate glass outside and shatterproof glass in the inside hinged sash. The curved windows in the observation room at the end of the fourth car are double rubber-glazed units. The seats in the coaches are Karpen double rotating type, except at the bulkheads where fixed seats are installed.

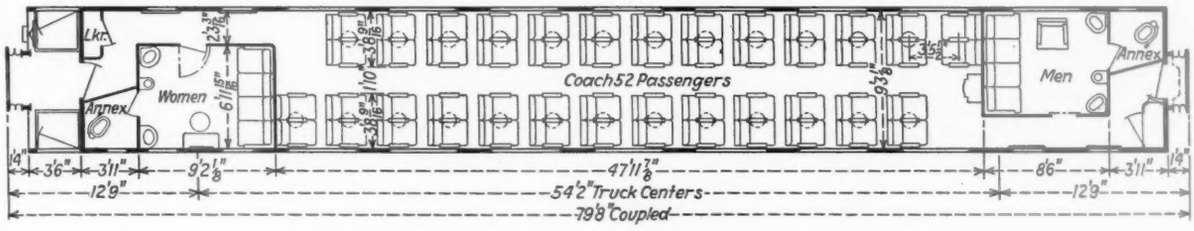
The power plant on each passenger-carrying car, for lighting, air conditioning, and heating, consists of a Hercules 69-hp. 6-cylinder Diesel engine, directly con-



The Diesel-Electric Power Plant Which Furnishes Energy for Heating, Lighting and Air Conditioning



The Power-Baggage Car Houses the 1,000-Hp. Electro-Motive Traction Power Plant



Lounges Are Provided in the 52-Passenger Coach for Both Men and Women

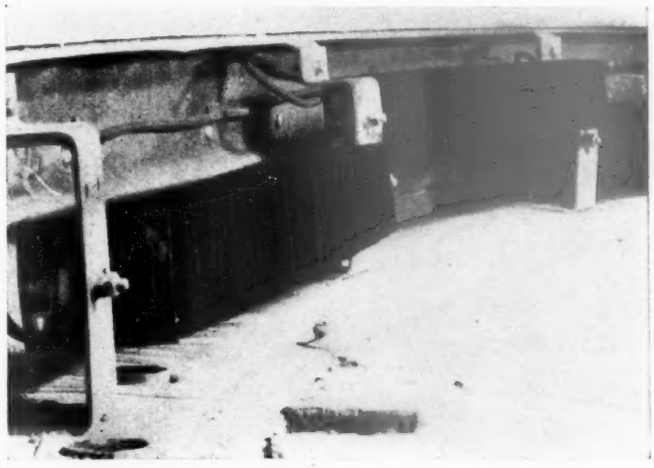
nected to a General Electric 1,800-r.p.m., 3-phase, 220-volt, 30-kw. electric generator. The power unit is mounted under the car in a sound-deadening inclosure, suspended from a sliding carriage on rubber mountings at three points. The engine carriage is mounted on a series of ball-bearing rollers, which permit moving the complete unit laterally from under the car so that all sides of the engine and generator are accessible for maintenance. To roll the unit out of the box it is necessary to take off the side door and remove safety bolts and the exhaust-pipe flange. The fuel-oil, circulating water and electrical connections to the engine and generator are permanently connected flexible lines. In the event of a power-plant failure, the crippled car may be supplied with power from an adjacent car. To accomplish this the cars are equipped with No. 2 three-wire train lines and car connectors which can be put up for this purpose. Normally the cars are operated as independent units.

Car Heating

During cold weather the cars are heated by waste heat from the engine jacket water and by electric heaters. The jacket water heat is distributed through the duct air-distribution system from an overhead radiator, and the electric heaters placed in housings on the floor close to the side walls can be connected in various Y and delta combinations to meet the heating requirements. The individual heating units are so located that there are no hot spots under any connection arrangement. Beginning at 45 deg. F. outside temperature, a small amount of electric heat is used, and this is increased in steps to the maximum. The waste heat from the engine supplies from two-thirds to three-fourths of all the heat required, but cannot be used to the exclusion of the electric heat, since it is necessary to have load on the generator to develop heat in the engine jacket water. The minimum amount of electric heat used is 5 kw. and the maximum is 20 kw.

Weights of the Cars in the C. B. & Q. "General Pershing" Zephyr

	Body				
	Dry weight, lb.	Ready for service, lb.	Trucks, lb.	Total ready to run, lb.	Revenue load, lb.
Power-baggage unit ..	121,945	134,185	67,635	201,820	32,000
70-passenger coach ...	70,443	73,190	35,210	108,400	11,200
52-passenger coach ...	67,603	69,790	35,210	105,000	8,320
Diner-lounge	77,523	87,330	36,470	123,800	7,120
Total weight				539,020	



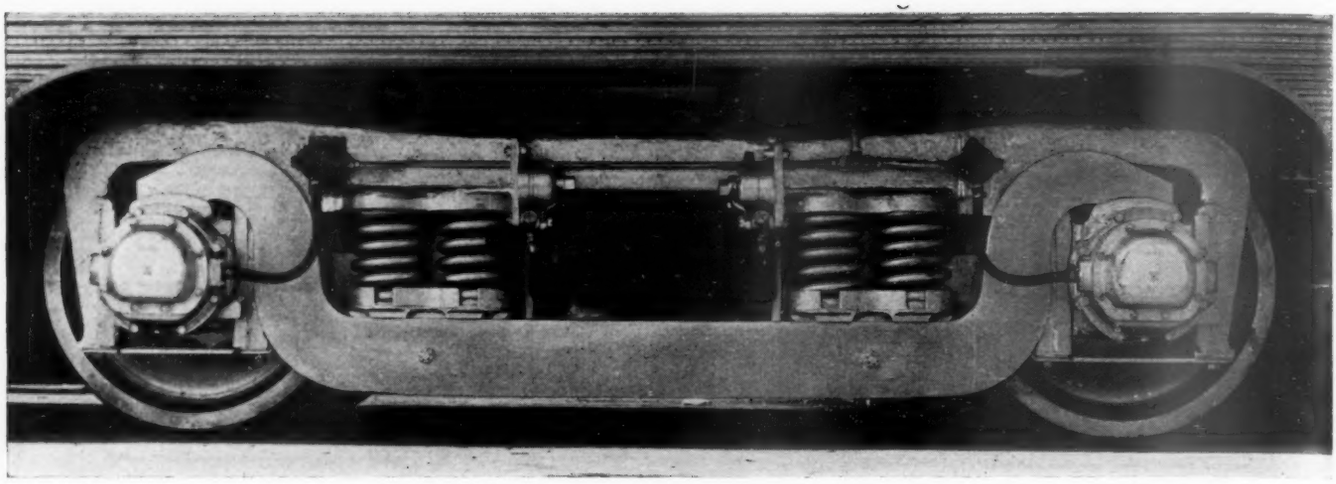
Electric Heater Units Installed Along the Sides of the Lounge Room

The exhaust gas line from the engine is water-jacketed to the extent necessary to supply the required heat to the cooling water. After the cooling water is discharged from the engine, it passes through a service-water heater. There is no storage of hot water, since the service-water heater is instantaneous in action.

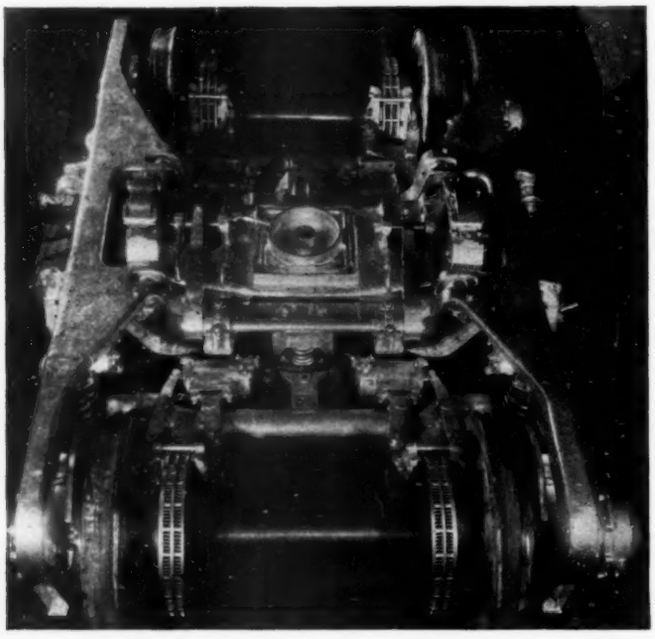
From the service-water heater the water passes through a circulating pump and then through an electric immersion heater, which has a three-fold purpose. First, it is used to supply heat to water for standby service in winter. Second, it supplies heat to the car and to the Diesel engine under parking conditions. Third, in cold weather, when the car is being put into service from a cold start, the electric immersion heater is used to warm the Diesel engine sufficiently to make starting easy (50 deg. F.).

Water from the electric immersion heater is piped to a three-way proportioning valve, which is placed so that the total supply of water, or such an amount as is required by the controlling thermostat in the car, may be directed to the overhead radiator in the ventilating duct. The other line from the three-way valve bypasses the radiator and goes into a return line.

The return line is divided, one branch passing to a



Decelostats Are Installed on Each Axle of the Power Trucks



Top View of a Four-Wheel Truck Showing the Disc Brake Units

mixing valve and the other one to Diesel engine radiators under the car, which remove excess heat remaining in the water after that required for car heating or service-water heating has been utilized. The line from the Diesel radiators under the car also passes to the mixing valve, which blends the warm water returning with the cold from the Diesel radiator so that the water always goes to the engine jacket at a fixed temperature of 165 deg. F. The position of the valve is controlled by a bellows thermostat.

The electric immersion heater is an insulated stainless-steel tank containing four 6-kw. heating units. It can be supplied with energy only from a standby source, and is not used when the engine is running.

Car Cooling

The motor-driven compressor which supplies refrigeration does not cycle in the usual manner, but starts automatically when the outside temperature reaches 60 deg. F. and runs continuously as long as the temperature is above that point. At the lower cooling temperature, 75 per cent outside air is admitted through the evaporators and, as the outside temperature rises, the amount of fresh air admitted is reduced automatically from 75 to 25 per cent by dampers in the intake air ducts.

Under these conditions the amount of cooling supplied is in excess of the car requirements, and the air, after being cooled to a low temperature, is reheated to the proper temperature by engine jacket water. This procedure effects maximum dehumidification of the air and minimizes loss of refrigerant caused by starting and stopping of the compressor.

Air sterilization equipment is installed in the path of the recirculating air. It consists of nine 15-watt Sterilamps, which are vacuum tubes made of special glass. They emit ultra-violet light which destroys air-borne bacteria. The Minneapolis-Honeywell temperature-control system maintains an air condition inside the car based on wet-bulb temperature, which is made to vary as a differential of outside temperature.

The air compressor on each of the three cars is a 7½-ton unit, driven by a 10-hp. 3-phase 60-cycle 220-volt a.c. motor. The evaporators in the two coaches each has a capacity of 7½ tons, while the diner-lounge car is equipped with two 4-ton units, one for each half of the car.

Lighting

All of the general lighting and some lighting for special applications is accomplished with fluorescent units. In the 70-passenger coach a continuous line of 36-in. 30-watt lamps are placed in a shallow circular-arc white reflector extending the entire length of the passenger section. No louvers or other form of light-source protection or control is used.

The center units are supplemented with an 18-in. 15-watt unit behind ribbed glass recessed into the baggage racks over each double seat. These can be controlled individually by a small toggle switch at the side of each unit. There is a total of twenty 30-watt and thirty-six 15-watt units, and the illumination on the 33-in. 45-deg. reading plane varies from 20 to 24 foot candles.

In addition to the general lighting, there are 10 blue night lights recessed at even spacings into the center lighting fixture. There are also two 25-watt incandescent vestibule units, four 25-watt incandescent passageway units, two 15-watt fluorescent fixtures in the lavatory, three 15-watt ceiling fixtures, and one dressing-table fluorescent lamp in the women's lounge and one 25-watt incandescent unit in the women's annex.

The 52-passenger coach is lighted in a similar manner,

except that there are fewer units in the passenger section and more in the lounge. Both the lounge and dining sections of the diner-lounge also have the continuous central lighting fixtures. In the lounge section these are supplemented with 18-in. fluorescent units recessed into the baggage racks, like those in the coaches. There are also continuous built-in coves over the rear windows, in which 18-in. fluorescent lamps are used. In the dining section, the central lighting is supplemented by a 36-in fluorescent lamp in a cove over each window. This arrangement produces a lighting intensity of 43 foot candles on the table top adjoining the windows and 24 adjoining the aisle. Fluorescent lights are also used over the buffet and in the lavatories. The kitchen, pantry, vestibules, the two marker lights, and the back-up light are all lighted with incandescent lamps.

Auxiliary Electrical Equipment

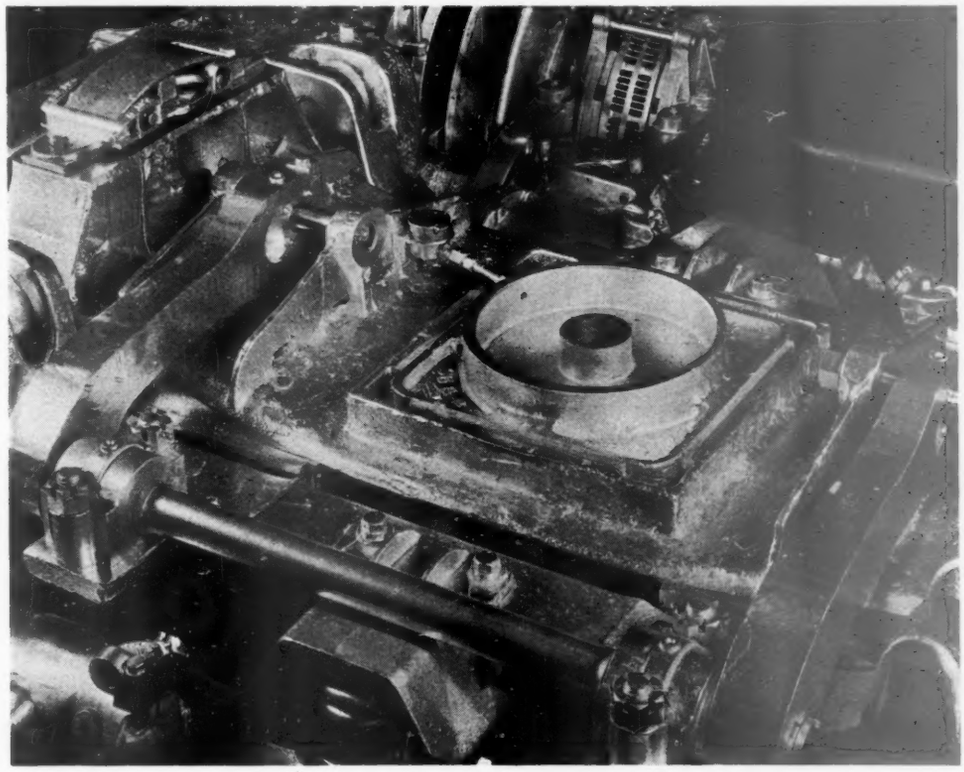
In addition to the Freon compressor motor, the air-conditioning system employs a Freon-condenser-fan motor, a Diesel circulating-pump motor, a Diesel-radiator-fan motor, an air-duct blower-fan motor, exhaust-fan motors, a damper-control motor, and a three-way-valve-control motor. There is also an air-compressor motor which is used only if the train-line air is not maintained, and compressor and fan motors are required for the water coolers. These create a total power demand of 13.3 kw. The minimum demand for lights is 1.6 kw. and the maximum 4.3. The air sterilization apparatus requires 0.2 kw. The maximum generator load for summer operation is 17.8 kw. and for winter, 30.5 kw. There are also 110-volt outlets in the lounges and lavatories.

Each car is equipped with a Motorola automobile-type radio with two loud speakers. In the coaches the speakers are placed in the front and rear bulkheads of the passenger section, and in the diner-lounge car there is one speaker in each section. An Exide 150-amp.-hr. storage battery is used on each car for engine starting and auxiliary-power supply. It is charged from the exciter only.

Wayside power is obtained through 3-pole, 100-amp., 250-volt receptacles, one on each side of the car. A relay locks out the contactor on this circuit when the engine is operating. The electric control for air brake and signals is carried between cars by two 8-point, 20-amp., 250-volt receptacles and jumper assemblies. For train-power emergency connections, there are 3-pole, 200-amp., 250-volt receptacles, two at each end of the car, where such connections may be required. Each car also carries one jumper assembly. To prevent freezing or the formation of rime in drain openings, they are jacketed with thermostatically controlled electric heaters. Electric heaters are also used in the diner-lounge toilets, which are subject to exposure when the car is parked, and there is one heater used in the kitchen to prevent freezing of water. Electric space heaters in the heat-insulated battery box protect the battery from low temperatures. The cars are wired, for the most part with long-life, double-braid, rubber-covered wire, asbestos-insulated wire being used for the heaters. The wiring is run in hot-dipped galvanized conduit under the car, and within the car in thin-wall rigid conduit or in the channel sections. The required 110 volts for lighting circuits is obtained through 2-kva. single-phase transformers.

The Brakes

The trucks under the passenger-carrying cars and the rear truck under the power-baggage car are of the four-wheel type with alloy cast-steel frames and bolsters. These trucks have a 9-ft. wheel base and are of the double equalizer type with helical equalizer springs and elliptic bolster springs. The lateral motion of the bolsters is checked by Houde shock absorbers. All axles of the four-wheel trucks are fitted with Timken roller bearings. With the exception of the rear power-baggage-car truck and the leading diner-lounge-car truck, which have 6-in. by 11-in. journals, the journals are 5½-in. by 10-in. An unusual feature in the design of these trucks is the use of a torque type lateral stabilizer which prevents the



The Torque Stabilizer Installation on the Four-Wheel Truck

truck bolster from tilting under loads concentrated on one side bearing.

The outstanding feature of the truck is the disc brake developed by the Budd Wheel Company. Essentially, this brake consists of a disc and a pair of shoes, one of which bears against each face of the disc. The outer and inner disc faces against which the shoes bear are separated by radial vanes which act as impellers to induce a radial air flow between the inner walls of the braking surfaces, thereby expediting the dissipation of the heat generated in braking.

A disc, with its brake-shoe combination, is mounted against the inside hub face of each wheel. Each segmental brake shoe covers approximately one-third of the disc circumference. The shoes are operated by a pair of tongs fulcrumed on a transverse tubular support, lying just outside of the disc and wheel radius. A brake cylinder is hung on the outer extremity of one of the tongs and the piston rod connected to the other. In this manner the bearing pressure between the two shoes operating on each disc is equalized. The shoes, themselves, are in turn hinged to their respective tongs so that they may aline themselves freely with the disc surfaces.

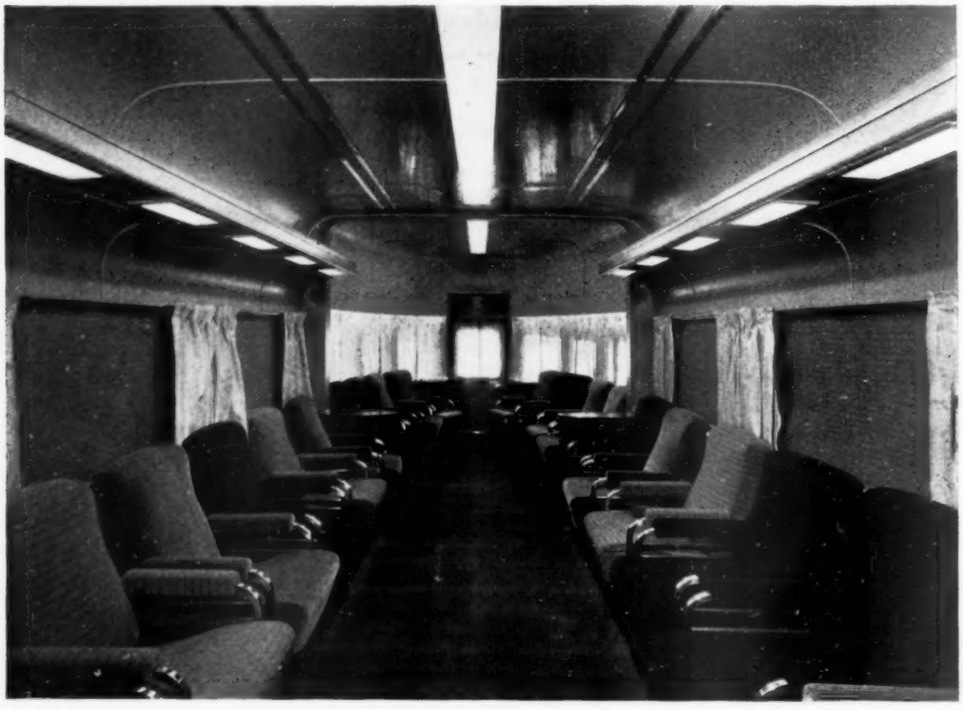
The tubular C-frame upon which the tongs are fulcrumed extends transversely across the truck and beyond the wheels where it is suspended on the journal boxes by integral side arms which reach in radially outside of the wheels. A torque arm on the center of the transverse member of the C-frame is spring supported at the center of the truck transom. The brake cylinders and brake shoes thus have a three-point suspension of essentially the same type as that of a nose-suspended traction motor. The brake shoes, therefore, always remain in fixed radial relation to the axle, and the application of the brakes does not interfere with the full resiliency of the truck suspension.

The wearing faces of the brake shoes comprise a number of segments of automotive type composition lining which are spaced apart and rubber-supported on the shoe retainer. This facilitates the maintenance of uniform bearing pressure and improves heat dissipation.

The relatively large surface area on the two sides of each brake disc, combined with the ventilating feature, provides for a high rate of heat dissipation and the maintenance of surface temperatures lower than those developed at the brake-shoe and wheel-rim surfaces with the conventional brake. These factors are expected to effect a more uniform coefficient of friction throughout the duration of brake applications.

The air-brake equipment on this train is the Westinghouse high-speed-control type embodying electro-pneumatic, straight-air and automatic-pneumatic control features. In addition to these regular features of the H. S. C. equipment, this installation embodies the first application of a new means of insuring the highest practicable rate of retardation at all times with protection against wheel sliding. This function is effected by a Decelostat on each non-power axle in the train and a Decelostat valve installed at each truck. This equipment operates to check the progress of incipient wheel sliding.

The Decelostat is a rotary inertia device, with its rotor driven through a leaf spring from one end of each axle. The tension of this spring is subject to adjustment. If the axle is decelerated rapidly, as during incipient wheel sliding from a brake application, the inertia of the rotor causes it to tend to overrun the wheel speed, a tendency resisted by the flexing of the leaf spring. As the rotor overruns the wheel speed and, therefore, turns a limited amount on its supporting shaft in the direction of rotation, it closes an electric circuit leading to magnets on the Decelostat valve and on the automatic sanding relay. The valve responds immediately to reduce brake-cylinder pressure quickly through its large-capacity relay valve. Coincidentally, the magnets on the electro-pneumatic time-limited sanding system are energized. Sand is thereby ejected on to the rail from the power unit and from the first car for a definite, predetermined interval. When the wheel has resumed its normal speed of rotation by the momentary reduction of brake force, the Decelostat rotor again revolves in synchronism with axle speed and the Decelostat mechanism returns to its normal position, breaking the electric contact and de-energizing the magnet. The Decelostat valve then operates automatically to restore brake-cylinder pressure to the original value.



Looking Toward the Observation End of the Parlor-Lounge—The Photograph Was Taken by the Light from the Fluorescent Lamps

A lamp is placed in the operator's cab which lights when any Decelostat in the train operates, thus providing a visual indication to the engineman that he is braking up to the adhesion point of the rails.

Prior to being placed in service, the new General Pershing train was subjected to extensive brake tests by the railroad. These tests have demonstrated the general reliability and satisfactory performance of the new braking equipment. For instance, a stop from a speed of 91 m. p. h. was made in 35 sec. and a distance of 2,415 ft. A subsequent stop from 100 m. p. h. is reported to have been made in 46 sec. and a distance of 3,157 ft.

The Traction Power Plant

The traction power plant is installed in a 26-ft. engine-room in the leading unit of the train. It is a standard 12-cylinder, 1,000-hp. Diesel electric power plant built and installed by the Electro-Motive Corporation, a subsidiary of General Motors. The Electro-Motive Corporation also built the one-piece welded molybdenum-steel front section of the underframe and the all-welded alloy-steel six-wheel power truck. This truck is equipped with Hyatt roller bearings, and the bearings are nominally 6 in. by 11 in.

Interior Treatment

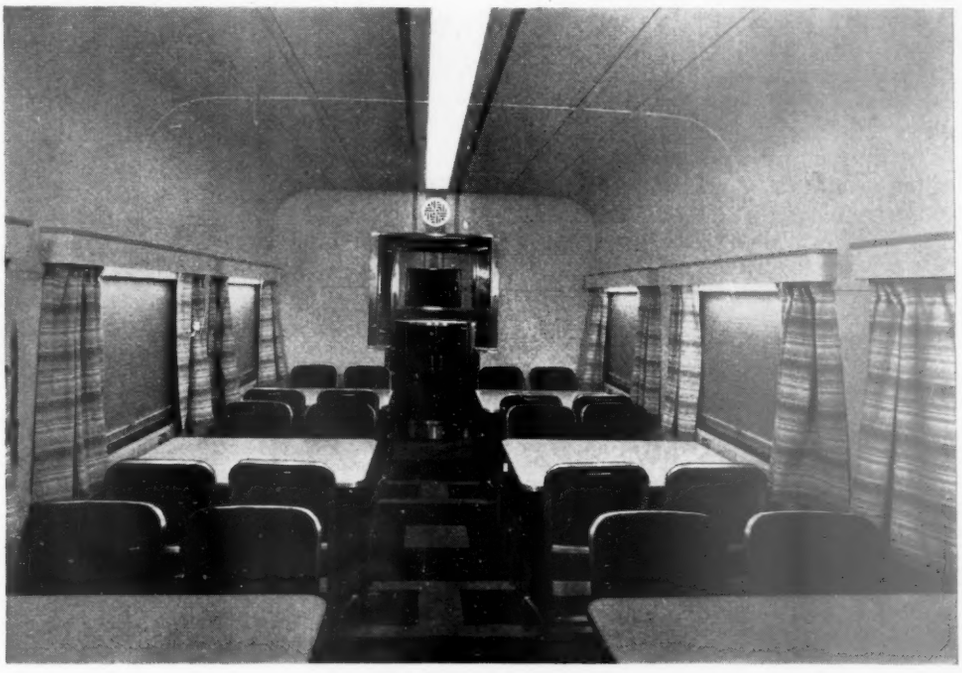
The interior decorations of the passenger coaches are simple and are suggestive of the tones of the autumn landscape. The ceilings are finished in light sandstone down to the luggage racks. The luggage racks and the sides and end walls to the floors are in a single color in each car. In the 70-passenger coach this color is a mountain brown, and in the 52-passenger coach, a nut pine. Stripes of the body color are repeated in the ceiling on each side of the lighting trough. The floors in both coaches are covered with Chase Seamloc carpet in henna rust with a mixture of mahogany. The mohair upholstery in one car is brown and in the other, rust. The windows are framed in drapes of sand with narrow horizontal tufted stripes of brown. Throughout the train the inside faces of the Pantasote window shades are in a light brown, and the window sills are in ebonized mahogany.

The decorations of the dining room are unusual in that a single color is used throughout the room for ceilings, sides, and ends. This is a flesh-tinted light drab. Color is added to the room by transversely striped window drapes in soft, variegated tones of red, orange, brown, and tan. Longitudinal ceiling stripes and the curtain-box capping are in a burnished copper. The Seamloc carpet is henna rust, with the insert pattern in sand. The metal-frame dining chairs are upholstered in raisin-colored mohair.

At the end of the kitchen passageway is a simple, curved-front buffet with a plain rectangular mirror on the pantry bulkhead above. The buffet and mirror are framed in a rectangle of stainless steel which outlines the passageway in the dining-room bulkhead. The door at the rear of the dining room which opens into the vestibule is finished in copper.

The dining-room body color is repeated in the kitchen corridor, with the exception of the pier panels and wainscoting which are of stainless steel. The body end door is finished in copper.

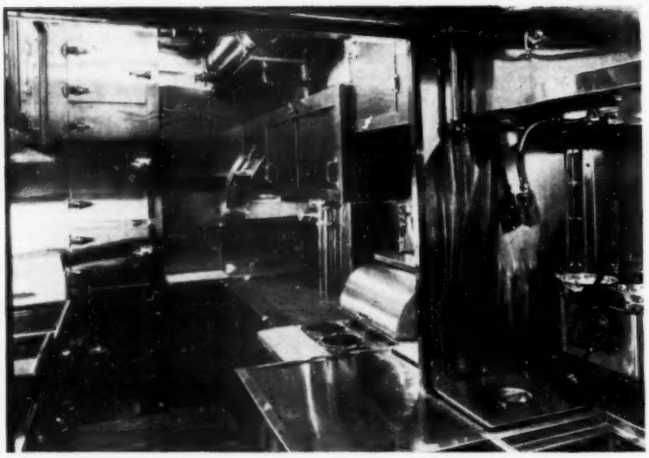
Luggage racks extend back through the observation room to the narrow bulkhead which separates the curved observation end from the remainder of the compartment. In this room the ceiling is finished in two tones, a light yellow in the center and a light sand at the sides, separated by stainless-steel moldings. Below the luggage racks the sides and front-end walls are finished in brown tan. The floor is covered with Seamloc carpet with a jade green ground and offset stripes of brown. The tubular-frame club chairs are upholstered in a variety of weaves of mohair in turquoise, chamois, and dark brown. Golden-yellow drapes are hung at the sides of the windows.



The Dining Room—The Walls and Ceiling Are of a Single Pastel Tone, to Which Brilliance Is Imparted by the Variegated Tones of the Drapes

On the left side of the forward doorway of the lounge section hangs a circular oil portrait of General Pershing. On the right side hangs a companion painting showing a facsimile of the General's signature and drawings symbolic of his the achievements, honors, and integrity.

These handsome paintings are made an integral part of the decorative scheme of the car and are interesting

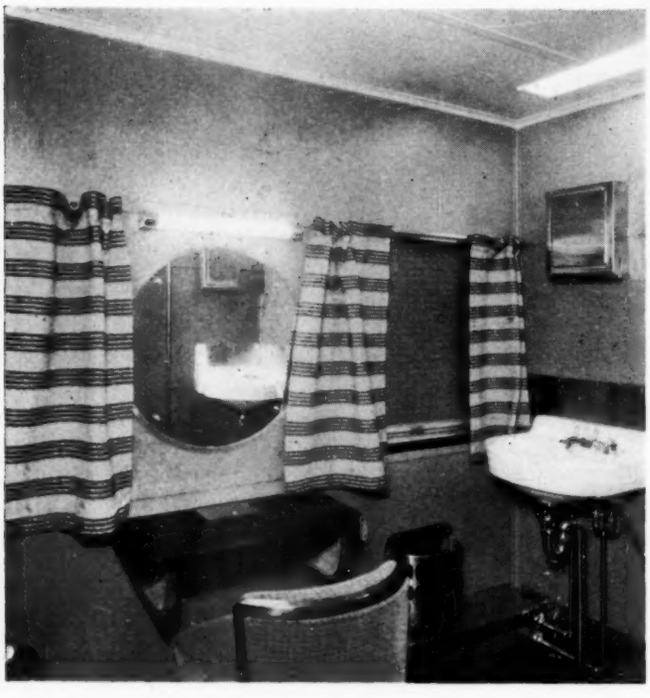


A View of the Kitchen from the Pantry

here, not only because of the success of the artist, Buell Mullen, in reflecting the strong character of General Pershing in her portrait, but because it is the first time an oil painting has been done on stainless steel. By a new technique in oil painting on metal, developed by Mrs. Mullen after many experiments, a third dimensional effect is attained. Constantly changing reflections from the highly polished surface of the stainless steel add to this effect. The artist has here, by her method of preparing the steel, applying the paint, and baking on a protective coating at high temperature, made permanent the portrait of General Pershing.

The men's and women's lounges in the coaches, the toilet rooms, and the passageways throughout the train are finished in tones of sand and brown. The floor coverings are jaspe linoleum, in which tones of brown and terra cotta are variously applied.

An interesting innovation in the hardware is the use of push-pull type handles on the end doors in the passenger-carrying car bodies. There is an electro-mechanical water cooler in each of the three passenger-carrying cars.



A Women's Lounge

In the 70-passenger coach and in the diner-lounge these are built into the lavatory partitions. In the 52-passenger coach a cabinet type installation is placed at the end of the aisle against the bulkhead of the women's lounge.

The styling and coloring of the interiors of the passenger-carrying cars in this train were developed by Paul Cret.

Partial List of Materials and Equipment on the "General Pershing" of the Chicago, Burlington and Quincy

Steel	Allegheny Ludlum Steel Corp., Pittsburgh, Pa.
	Carnegie-Illinois Steel Corp., Pittsburgh, Pa.
	Republic Steel Corp., Masillon, Ohio
	Superior Steel Corp., Pittsburgh, Pa.
Truck frames	General Steel Castings Corp., Eddystone, Pa.
Wheels and axles	Bethlehem Steel Co., Bethlehem, Pa.
Elliptic and coil springs	American Steel Foundries, Chicago
Bearings (power truck)	Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

One of the Coaches Photographed by the Illumination from the Fluorescent Lamps

Roller bearings	The Timken Roller Bearing Co., Canton, Ohio
Equalizer and forgings	J. G. Brill Co., Philadelphia, Pa.
Shock absorbers	Houde Engineering Corp., Buffalo, N. Y.
Rubber cushions (truck)	United States Rubber Company, New York
King pins	W. H. Miner, Inc., Chicago
Side bearings	The Standard Equipment Co., Cleveland, Ohio
Disc brakes	Budd Wheel Co., Detroit, Mich.
Air brakes	Westinghouse Air Brake Co., Wilmerding, Pa.
Hand brakes	National Brake Co., Buffalo, N. Y.
Couplers	American Steel Foundries, Chicago
Buffer and draft gear	Edw. G. Budd Mfg. Co., Philadelphia, Pa.
Diaphragm curtain	The Adams & Westlake Co., Elkhart, Ind.
Grab handles	J. G. Brill Co., Philadelphia, Pa.
Traction power plant	Electro-Motive Corp., La Grange, Ill.
Sanders	Graham-White Sander Corp., Roanoke, Va.
Air conditioning:	
Compressor and motor	General Electric Company, Schenectady, N. Y.
Rubber mountings	United States Rubber Company, New York
Condenser	The Trane Co., La Crosse, Wis.
Grilles	Barber-Colman Company, Rockford, Ill., Tuttle & Bailey, Inc., New Britain, Conn.
Sterilamps	Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.

Power plant for heating, lighting and air-conditioning:	
Motor	The Hercules Motors Corp., Canton, Ohio
Starting motor	Delco-Remy Div. General Motors Corp., Kokomo, Ind.
Generator; transformer; alternator	General Electric Company, Schenectady, N. Y.
Control equipment	Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.
	Automatic Temperature Control Co., Philadelphia, Pa.
Oil clarifier	Briggs Clarifier Co., Washington, D. C.
Fuel gages	King Engineering Corp., Ann Arbor, Mich.
Injection pump; nozzle and nozzle holder	The Timken Roller Bearing Co., Canton, Ohio
Booster water pump	Worthington Pump and Machinery Corp., Harrison, N. J.
Water heater	H. A. Thrush & Co., Peru, Ind.
Radiator unit	Young Radiator Co., Racine, Wis.
Exhaust muffler; multivent units	Burgess Battery Co., Madison, Wis.
Air filters	American Air Filter Co., Inc., Louisville, Ky.
	Air-Maze Corporation, Cleveland, Ohio
	Vortox Mfg. Co., Claremont, Calif.
Exhaust fans	B. F. Sturtevant Co., Hyde Park, Boston, Mass.
Air compressors	The DeVilbiss Co., Toledo, Ohio
Rubber mountings	United States Rubber Company, New York
Heating equipment:	
Electric heating units	Consolidated Car Heating Co., Inc., Albany, N. Y.
Temperature controller	Penn Electric Switch Co., Goshen, Ind.
Fin radiator; steam train line	Vapor Car Heating Co., Inc., Chicago
Water submersion heaters	Edwin L. Wiegand Co., Pittsburgh, Pa.
Hot and cold water mixer	The Fulton Sylphon Co., Knoxville, Tenn.
Insulation:	
Stonefelt	Johns-Manville Sales Corp., New York
Wovenstone	Union Asbestos & Rubber Co., Chicago
Sash	Hunter Sash Co., Inc., Flushing, L. I., N. Y.
Glass	Libbey-Owens-Ford Glass Co., Toledo, Ohio
	Pressed Prism Plate Glass Co., Chicago
Copper tubing and fittings	American Radiator Co., New York
	Chase Brass & Copper Co., Inc., Waterbury, Conn.
Lighting:	
Batteries	Electric Storage Battery Co., Philadelphia, Pa.
Conduit	Steel & Tubes, Inc., Cleveland, Ohio
Switchboard	Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.
Transformer	General Electric Company, Schenectady, N. Y.
Train-line electric equipment	Pyle-National Co., Chicago
Electrical fittings	Appleton Electric Co., Chicago
Light fixtures	Luminator, Inc., Chicago
	Safety Car Heating & Lighting Co., New York
Fluorescent lamps	General Electric Co., Schenectady, N. Y.
Seats and lounge chairs	S. Karpen & Bro., Inc., Chicago
Dining-car chairs	General Fireproofing Co., Youngstown, Ohio
Radio	Galvin Mfg. Corp., Chicago
Plush upholstery	Massachusetts Mohair Plush Co., Boston, Mass.
Presdwood	Masonite Corp., Chicago
Window shades	The Pantasote Co., Inc., New York
Window drapes	L. C. Chase & Co., Inc., New York
Window curtain fixtures	The Adams & Westlake Co., Elkhart, Ind.
Hardware	H. S. Getty & Co., Inc., Philadelphia, Pa.
Door closers	Russell & Erwin Mfg. Co., New Britain, Conn.
	Yale & Towne Mfg. Co., Stamford, Conn.
Door locks	Dayton Mfg. Co., Dayton, Ohio
	Jas. L. Howard & Co., Hartford, Conn.
Ash stands	Marshall Field & Co., Chicago
Cuspidors	Dayton Mfg. Co., Dayton, Ohio
Mirrors	Pittsburgh Plate Glass Co., Pittsburgh, Pa.
Floor coverings:	
Carpet	L. C. Chase & Co., Inc., New York
Cork floor	Armstrong Cork Co., Lancaster, Pa.
Masonite	Masonite Co., Chicago
Kitchen, pantry, and buffet	Angelo Colonna, Philadelphia, Pa.
Electric water coolers	General Electric Co., Schenectady, N. Y.
Water-raising system	Westinghouse Air Brake Co., Wilmerding, Pa.
Cup dispenser	Logan Drinking Cup Div., U. S. Envelope Co., Worcester, Mass.
Lavatories	The Adams & Westlake Co., Elkhart, Ind.
Basins	Abington Sanitary Mfg. Co., Abington, Ill.
Hoppers	Duner Co., Chicago
Soap dispensers	West Disinfecting Co., Long Island City, N. Y.
Paper towel dispenser	Northern Paper Mills, Green Bay, Wis.
Toilet-paper holder	Morgan Paper Co., Lititz, Pa.
Fire extinguishers	Pyrene Mfg. Co., Newark, N. J.
	Phister Mfg. Co., Cincinnati, Ohio
Paint	Murphy Varnish Co., Newark, N. J.

Canada Gets Its First "Agreed" Rate

On May 1 there will go into effect in Canada an "agreed" charge—C. T. C. (AC) No. 1—between the Canadian National and the Canadian Pacific, as carriers, with a shipper who is a large manufacturer of boxboard, covering the transportation of "Boxboard, carloads, from Montreal, Que., and Toronto, Ont., to Edmonton, Alta."

The rate is $1.10 per 100 lb. in carloads of a minimum weight of 60,000 lb.

The shipper agrees "not to ship or permit or cause to be carried any part of the said traffic by any other means of transportation whatsoever."

Upon default on the part of the shipper, the railways will have the right to demand the regular tariff rates for all traffic handled and also to collect damages of 10 cents per 100 lb. for all such freight shipped by any other means of transportation. The railways have the right to inspect "all books and records whatsoever" of the shipper to ascertain that the agreement is being complied with.

In making an "agreed" rate, the railways are obligated under the law to offer the same terms to any other shipper who will meet substantially the same terms and conditions attached to any existing agreement. In England, "agreed" rates are usually made at a flat price for any distance—but this practice, of course, is not feasible in Canada where distances are so much greater.

The justification for permitting such "agreements" is that the railway is the *only* agency affording all-year-round service for all commodities to all points. It cannot continue to give such complete service—if other agencies are to pick and choose the favorable business in good weather, leaving the railway only as a bad-weather facility for poor-paying traffic to isolated destinations. The "agreed" charge is an experimental device to permit the railways, if possible, to hold traffic on the basis of their *average* superiority over competing forms of transportation. Another "agreed" charge is now pending before the Dominion Transport Board. If the device meets with success, such "agreements" ought soon to be coming through thick and fast.

Communication Men Compare Notes on Recent Progress

Tell how modern installations improve train and yard operation —Technical problems considered

AN atmosphere of enthusiasm and interest pervaded the Twentieth annual session of the Telegraph and Telephone section, A. A. R., at the Hotel Jefferson, St. Louis, Mo., on April 18, 19 and 20. This meeting, the first for the Telegraph and Telephone section since October, 1938, was attended by 310 members and guests, and was presided over by D. E. Galloway, chairman of the section, and assistant vice-president, telegraph and telephones, of the Canadian National.

The introductory address was presented by G. C. Randall, chairman of the General committee of the Operating-Transportation Division, A. A. R. Mr. Randall stated that the railroads are dependent, to a very great extent, upon communication systems for their efficiency, and that no small part of the improved service being rendered by the roads today is due to the remarkable advances made in railroad communication. He complimented the committee members on the reports submitted for the Manual of Recommended Practices which the session was to consider, and emphasized that full benefit of the section's efforts could be obtained by the member roads only by following the contents of the Manual in actual practice.

W. A. Fairbanks, secretary of the section, read the report of the Committee of Direction, and announced the committee's selection of the present officers, D. E. Galloway, Canadian National, and G. R. Stewart, Illinois Central, to serve as chairman and vice-chairman of the section, respectively, until December 31, 1940. In addition, T. P. Brewster, superintendent of telegraph of the Atchison, Topeka & Santa Fe, has been appointed a member of the Committee of Direction until December 31, 1939, to fill the vacancy caused by the retirement of H. C. Chace, formerly superintendent of telegraph of the Santa Fe.

How Dispatching Can Be Improved

Three interesting papers, of a highly instructive and educational nature, were interspersed among the various committee reports. D. A. Fawcett, assistant to assistant general manager of the New York Central, aroused considerable interest with a discussion of the relation of an adequate communication system to efficient train and yard operation. He illustrated the importance of railroad communication systems by pointing out that, although complete collapse of communicating lines is rare, such an occurrence would result practically in chaos. Mr. Fawcett mentioned lines used for the dispatching of trains as ranking first in importance and emphasized the efficiency and safety features of the telephone for such purposes. In discussing possible improvements that might be made in dispatching facilities, he suggested the elimination of as much noise and confusion as possible from dispatchers' offices, and pointed out the desirability of providing for acoustical treatment of ceilings, the use of devices to control the volume of loud speakers, automatically, and the introduction of microphones in place of the conventional breast transmitter for train dispatchers.

Mr. Fawcett cited the development and installation of centralized traffic control as a great step forward toward more efficient and economical operation, and stated that, in his opinion, much more of this type of operation will be provided as the financial condition of the carriers permits. He drew attention to train communication systems permitting conversation between engines and cabooses, and to systems providing for communication between trains and wayside points and between trains in close proximity on the same or adjacent tracks, stating that, although such systems have not yet reached the stage of perfection desired, they have been developed to a point where cost is the only factor retarding more extensive installations.

Attention was called by Mr. Fawcett to the necessity of adequate communication as it affects yard and terminal operation, remarking that such facilities are next in importance to the dispatching circuit. He cited the advantages of co-ordinating lines in such areas by the use of private branch or automatic exchanges, and the necessity for good maintenance. In discussing communication facilities which contribute effectively to efficient yard, terminal and relay office operation, Mr. Fawcett drew attention to the advantages accruing through the use of teletype machines for the transmission of messages, consists and switch lists. With reference to local and long distance talking circuits, Mr. Fawcett pointed out that there is considerable idle time on some of these circuits during the night period, which might be utilized by some department, and mentioned a specific example where billing is done faster and more economically on one road by using idle night circuits (*Railway Age*, February 25, page 336). Mr. Fawcett's paper was discussed by W. F. Kirk, general superintendent transportation, and H. E. Roll, director of terminals, of the Missouri Pacific, and by G. D. Hood, superintendent of telegraph of the Chicago, Rock Island & Pacific.

Two technical papers, entitled, Inductive Disturbances and Their Effects on the Operation of Telegraph Circuits, and Some Engineering Considerations in Loading Circuits, were presented, respectively, by L. M. Jones, assistant to engineer of lines, the Western Union Telegraph Company, and J. A. Parrott, engineer of special services, American Telephone & Telegraph Company. Mr. Jones described the phenomena and relative importance of disturbances caused by induction, cross-fire, earth potential, and duplex unbalance. W. A. Moore, communication engineer of the New York, New Haven & Hartford, and Wingate Chunn, telephone engineer of the Missouri Pacific, discussed Mr. Jones' paper. Discussion of Mr. Parrott's paper was led by J. L. Niesse, assistant superintendent telegraph, New York Central, and R. B. Steele, transmission engineer, Canadian National.

During the three-day session, the members considered in detail the reports submitted by 7 committees and 10 subcommittees. The first committee to be heard was that of Committee I—Outside Plant, J. A. Jones, general superintendent telegraph and telephone, Southern, chairman. Of principal interest was a revised extensive specification for the construction of railroad communication pole lines. D. E. Galloway, chairman of the section, drew attention to the importance of this specification in his opening remarks, stating that it had been in process of preparation by representatives of the railroads, in conjunction with representatives of the commercial companies, since 1930. W. S. Melton, superintendent telegraph and telephone, Southern, presented the specification which aroused considerable discussion, particularly with regard to side and vertical clearances, clearances from supply lines, and the effects of proposed 20-in., as compared with 24-in. gain spacing on transposition design for carrier-current circuits. However, after prolonged consideration, the report was accepted for submission to letter ballot. Committee I also presented specifications for the replacement inspection and for the stub reinforcement of wood poles and reported on recent state activities with regard to wire crossings.

Committee II—Inside Plant, G. R. Stewart, telegraph and telephone engineer, Illinois Central, chairman, submitted reports on a variety of subjects. These included: Specifications covering layouts in private automatic telephone switchboard rooms, floor-supported relay racks, cable racks and ducts, roll paper for printers, a printer switching device for automatic control of reperforators, installation and maintenance of caustic soda cells, information on self-regulating motor generator and rectifier power plants for communication service, instructions covering fire prevention in the communication plant, and rules covering testing for the presence of gas in underground conduit systems and other confined places. Discussion was concentrated particularly on methods of fire protection, led by W. A. Jackson, superintendent of telegraph, New York Central, and on the operation of self-regulating motor generator sets, led by R. B. Steele, of the Canadian National.

Committee III—Communication Transmission, R. B. Steele, Canadian National, chairman, presented revised sections of the Manual covering general requirements and instrumentalities of telephone transmission, a routine for maintaining ac.-operated dispatching circuit telephone repeaters, and a bibliography of communication papers published during the last three quarters of 1937 and during 1938.

The report of Committee IV—Research and Development, was opened by J. L. Niesse, New York Central, chairman. Mr. Niesse introduced R. C. Thayer, assistant superintendent telegraph, Lines East, Great Northern, who presented the report of Subcommittee 4-A, including requirement specifications for small portable transmission measuring sets and for amplifiers and loud speakers for use on dispatching circuits, and information on selector apparatus case relays, dial circuits for ringing operation on selector signaling circuits, coding cable by coloring rubber insulation, shunt dynamometers, measurement of wire sags, dry spot insulators, sleeves for compression-type joints in iron wire, and on several other items. Discussion was concentrated principally on the zero level required in the specifications for small portable transmission measuring sets; efforts were made to have the specifications require instruments with a zero level of one milliwatt into a 600-ohm load only, rather than allowing a five-milliwatt zero level instrument also as proposed in the specification; this motion lost and the specification was accepted. Subcommittee 4-C introduced specifications covering arrester relays and acoustic shock reducers.

J. L. Niesse, chairman of Committee IV, presented an interesting report by Subcommittee 4-B, covering communication on freight trains, fixed point to moving train communication within limited areas, application of radio to harbor craft operation, radio equipment for use in emergencies, carrier systems, and radio frequency allocations for freight train communication.

The Union Switch & Signal Company's train communication system has been developed for communication from a fixed point to moving trains or engines. Such an installation is in partial operation on the Birmingham Southern in the neighborhood of Birmingham, Ala. The Birmingham Southern operates about 18 miles of main-line track, extending from Birmingham to Bessemer. At Birmingham there is a railroad yard, where it connects with other railroads, and at Bessemer there is a car shop. At different locations along this main line there are various steel plants, and spurs and sidings at other locations, to the extent of approximately 75 miles of tracks in addition to the main tracks. The spurs go into steel mills, where the track layout is sometimes quite complicated. Near the center of the system, about eight miles from one end, is a yard office. The purpose of installing the communication system is to enable a dispatcher in this yard office to keep in communication with about 10 Diesel-electric locomotives which are used as motive power over the entire railroad. At present a considerable number of men are required to provide contract with the locomotives as they work over different parts of the territory. With the train communication system, it will be possible for the dispatcher in the yard office to talk to any one of the locomotive crews at any time and in any location within the equipped territory. He will call the locomotive with a distinctive bell signal and carry on his conversation as with an ordinary dispatcher's phone. At present the yard office and one locomotive are equipped.

The use of the Union Switch & Signal Company's communication system over such a territory requires some wayside connections in order to provide two-way communication. The office equipment is connected to the track and to a line wire which may be a telephone pair connected in phantom or a separate wire. With this connection it was possible to go over the entire main-line track, without any further connections between the track and the wire. The wire was parallel to the track and not far away, and the current induced from the wire into the track was sufficient to enable the locomotive to pick up the signal and also to transmit to the office. In the steel plants, however, it became necessary to make connections between line wires and the tracks in order to get complete coverage. This work is not complete, so that at present the equipment is useful over the entire main line and over portions of the steel plants, but is not in operation over the entire territory. The subcommittee found that, "an installation such as the one that has just been described could be used equally well for hump yard operations, and installations for this purpose are under consideration at the present time."

Southern Pacific Has Radio for Emergencies

In connection with radio equipment for use in emergencies, the subcommittee presented a detailed description of an installation made by the Southern Pacific in the Sierra Nevada Mountains. The Southern Pacific Company applied for and was granted construction permits by the Federal Communications Commission whereunder it would be permissible to install a fixed radio

transmitting station at Norden, summit of the Sierra Nevada mountains, the rated power of which is to be 500 watts, emission A-1 and A-3, frequency range 2,724 and 3,190 kc with tolerance percentage of 0.04, the call letters for which are to be "KAWJ." A similar construction permit was issued whereunder the Southern Pacific was authorized to construct a semi-mobile transmitting station on the fire train stationed at Emigrant Gap, the rated power of which is to be 50 watts, frequency 2,726 kc on A-3 emission and 3,190 kc on A-1 emission with tolerance percentage of 0.04, and the call letters for which are to be "KAWK." The above-mentioned frequencies are those assigned for special emergencies and their use is limited to times when the Southern Pacific wire lines are out.

The Southern Pacific's transcontinental line over the summit of the Sierra Nevadas between Roseville, Cal., and Reno, Nev., presents exceedingly difficult problems of operation and maintenance. By no means the least is that of combating the deep winter snows and the protection against fire of the snow shed district during the summer months.

Fire is the greatest agency of destruction of the snow sheds. The origin of these fires is largely due to outside causes. Some of them are due to adjacent brush fires originating in the immediate vicinity, or to an extension of neighboring forest fires. Almost since the inception of the snow sheds, a lookout station has been maintained on Red mountain at an elevation of 7,860 ft. for shed protection, with observers on constant duty during the summer period of each year. Located in this lookout is an ordinary engineer's transit to which, rigidly attached, is an aluminum indicator which travels over a chart etched in copper and attached to a stand directly in front of the transit. On this copper plate are shown the stations, fire alarm boxes and district telegraph boxes, with the vertical and horizontal angles of their location. Thus, by the reading of the vertical angle, it is at once determined if the shed itself is on fire. This is a necessary procedure due to the smoke obscuring sheds during a fire in the immediate vicinity. The indicator over the copper plate gives at once the nearest station or district box. Etched on the glass of the windows comprising the front bay of the lookout house is a line following the exact line of the sheds as seen through the transit. Intersection of this line and a line on the fire gives the location where the sheds are burning.

The station reports by telephone to central district station at Norden every half hour. If a fire is noted, the exact location is determined immediately, and if it is of such proportion as to require fire train service, as a large brush fire or the sheds themselves, or merely the service of a nearby section crew, advice is telephoned to Norden and from there further action is directed. Extending over the snow shed belt are a series of district telegraph boxes one mile apart, at which watchmen patrolling equal portions of the sheds report every hour or give an alarm if a fire is discovered. This is registered automatically on a tape at Norden. The tape is under continual observation and on the appearance of an alarm the nearest fire train is notified and the main line is cleared of traffic. During extremely dry periods in years past, fire fighting equipment in the Sierra Nevada mountains has consisted of four fire trains, each of which carries two tank cars with a capacity each of 125,000 gal. of water. A fire pump is mounted on top of the boiler of the locomotive just back of the steam dome and draws steam from the locomotive. The trains are each equipped with about 1,000 ft. of 2½-in. hose. A pipe system is arranged in such a way that water may be obtained from the front or back of the locomotive. While every known modern device that will make for safety in train operation is employed in handling the train movement over the Sierra Nevada mountains, such as the staff system, remote train control, etc., it was felt that when falling trees, storms and forest fires cut off service over wire lines, train operations would be further safeguarded by the installation at Norden of a "fixed" radio station with a carrier output transmitter of 500 watts and by equipping the fire train stationed at Emigrant Gap with a semi-mobile radio station.

Other Committee Reports

The problem of transportation design in connection with carrier systems and 20-in. gain was introduced again when carrier systems were discussed by Subcommittee 4-B. J. L. Niesse described the Type D, Type K-10, and a new transposition system designed by the Western Union Telegraph Company and asked for comments.

The report of Committee V—New Devices and Materials, was presented by S. L. Van Aiken, assistant superintendent telegraph, New York Central. The report gave information on 78 new developments and devices.

Committee VI—Communication Plant Operation, G. D. Hood, Rock Island, chairman, discussed classification telegraph service, methods of effecting economies and savings in telegraphing of railways, railway associations, and bureaus, periods to preserve message files, standard forms for the make-up of received telegrams, routine for handling telegrams, new developments in operating practices, balancing of polar duplex circuits, and the transaction of commercial business at railroad telegraph offices. W. Rogers, superintendent telegraph, Missouri Pacific, presented the committee's views on classification telegraph service, and suggested that the standard telegraph form for received telegrams be removed from the Manual and that a distinctively colored paper be used for all telegrams except diversions and reservations, and that another color be used for diversions and reservations. Considerable discussion followed, after which it was agreed that the standard form should be withdrawn and that the committee should continue its investigation of the possibility of coding received telegrams by some distinctive method.

The report of Committee VII—Inductive Co-ordination, was presented by W. A. Moore, New York, New Haven & Hartford, chairman, and included two sections discussing the fundamental principles of shielding and transposition, respectively.

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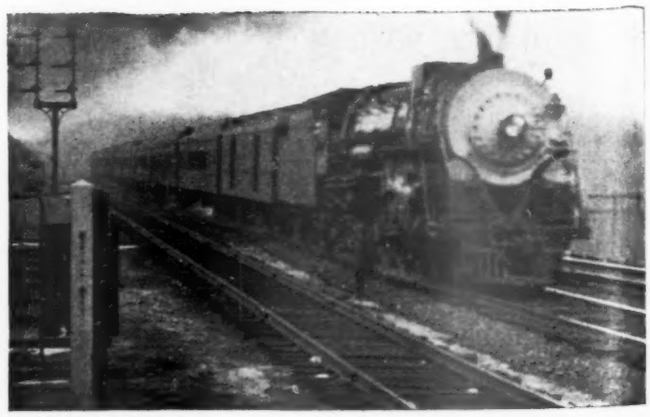

Photo by G. R. Payson, Jr.

The Boston & Albany's "New England States" Enroute in a Rain Storm at Webster Junction, Mass.

Lea Sees More Regulation Only Cure for Chaos

Tells N. Y. railroaders that general revision in rate practices is needed, covering all agencies of transport

Harris & Ewing

Clarence F. Lea

THE need for a thorough revision of the railroad rate structure for the purpose, among other things, of establishing "proper rate relationships with other types of transportation" and the necessity for unified regulation of all carriers by one body were the chief themes of a talk presented by Chairman Clarence F. Lea of the House Interstate and Foreign Commerce committee before the New York Railroad Club on April 21. Under the brief title "Transportation Legislation," the speaker discussed those problems of the transportation business which have occupied him for some time as the author of the so-called Lea "Omnibus Bill."

Railroad Rate Structure Creaking Badly

Mr. Lea was particularly critical of the railroad rate structure. Tracing the development of the principle of rates based on the value of commodities rather than the cost of carrying them, he pointed out that lately, in trying to hold traffic from competitors, the roads have "discriminated between the traffic that is sensitive to competition and that which was compelled to use the rails. For the competitive traffic they have made thousands of rate reductions voluntarily. Driven by this necessity, on the non-competitive traffic, especially the long hauls, they have sought to maintain and even increase the rates compared with the 1929 levels."

This course is, in his opinion, "chaotic and indefensible as a desirable public policy," in which the Interstate Commerce Commission "reluctantly acquiesced" out of necessity. And since, as he put it, the public demanded regulation when the competition of the 1870's and 1880's produced rate chaos, "the answer to the new competition and chaos of our time must be more regulation." He advocated, therefore, that study and reorganization of the railroad rate structure be made "in the interest of all carriers and the public, for simplication, for reduction of disparity and discrimination, and for the establishment of proper rate relationships with other types of transportation."

Reiterating throughout the speech his conviction that all carriers should come under equal regulation by one body so that the transportation machine might be administered with fairness to all, Mr. Lea assailed those interests who, for selfish reasons, oppose impartial control. In this connection he quoted Samuel O. Dunn, editor of *Railway Age*, whom he characterized as having "had an opportunity of observation surpassed by few men in our country," to the effect: "There has never been any other important American problem regarding which so many interests and individuals showed so much hypocrisy and short-sighted selfishness as regarding our railroad problem, and it cannot be solved under private ownership, if this continues to be the case."

The speaker declared himself in favor of subjecting carriers by water to substantially the same supervision by the Interstate Commerce Commission that it now exercises over rail and highway carriers. The lack of control of water rates by the commission is, in his opinion, "a decidedly disrupting influence on the freight rate structure of the country." As for the efforts of some of the water transport interests to defeat adequate regulation, the Congressman assailed the argument that regulation would mean their destruction and held that effective and just regulation will give greater stability and value to their operations, assuring them against "cut-throat" competition. Said he: "We hear a cry against regulating unregulated water competition based on the assumption that the purpose is unfriendly, and to destroy water competition for the benefit of rail carriers. This argument, if it can be given the dignity of an argument, assumes that the proposed law is vicious in its purpose, and that the Interstate Commerce Commission lacks the ability and moral rectitude which should forbid them from participating in any such destructive purpose.

"Whatever individual selfish hope any carrier may have entertained, no such purpose dominates this legislation. If unified regulation is provided, certificates of convenience and necessity will be necessary for new competitors. Every bonafide water carrier under regu-

lation will know that there is at least a reasonable limit on the number of competitors that may appear on the water against him. Through regulated control of competitive rates, he will have assurance against cut-throat competition."

The speaker gaged the extent of the influence of the water carriers on the country's rate structure by pointing out that the inter-coastal carriers compete with the railroads for freight for over one-half the population of the country, while competition on the Mississippi river system not only affects rates between points located directly on the rivers but for 150 miles on each side. The railroads have been forced to seek permission from the Commission to reduce rates to meet this competition and, since the water carrier was unrestricted in his right to lower rates, "there has been little inducement for the Commission to require proper rates of the rail lines when their competitors could fix destructive rates without restraint."

Anent the spending of public funds to produce "cheap" water transportation, Mr. Lea had this to say: "In Congress, I have heard some water projects advocated, not on the ground that the water improvement would lead to greatly increased water transportation, but on the ground, that it would lead to substantial reductions in competitive rail rates. In other words, by the system under which we have been operating, it has been necessary to go to the expense of establishing waterways to give communities those reasonable rates to which they should be entitled through proper regulation, rather than through building unnecessary water courses."

The speaker explained briefly the provisions of his bill in Congress which would separate the rate-making and administrative functions of the Commission, stating that the duties of that body should be distributed to permit more concentration of the members on their duties and better meet their responsibilities. This need has been recognized by the commission itself, he pointed out, in its proposal for a change in organization which would place more of its responsibilities on subordinate personnel, permit a lesser number to make decision on rate cases and establish an appeal board out of the present membership of the organization. This proposal of the Commission, if carried out, would, in his opinion, accomplish a large part of what was intended by his more comprehensive plan of reorganization proposed last January. He did not "think it opportune to press for the enlarged Commission at this time."

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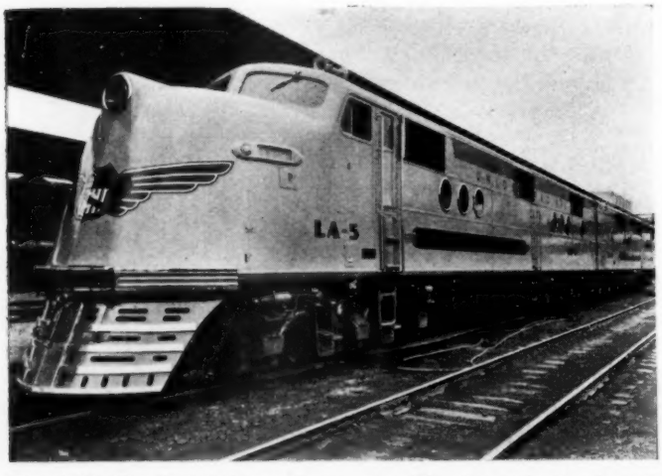


This 4,000 Hp. Diesel-electric Locomotive Was Recently Purchased By the Union Pacific and Chicago & North Western from the Electro-Motive Corporation and Placed in Service April 1 to Haul the "City of Los Angeles." Weighing 595,000 lb., It Consists of Two 2,000 Hp. Units Coupled Together for Multiple-Unit Operation

I. C. C. Permits Removal of Derails

THE Interstate Commerce Commission, on April 4, issued a decision No. 28000 (Sub. No. 3) and an order authorizing the New York Central to remove derails in the main-line tracks at a crossing of the N. Y. C. and the Michigan Central, at Porter, Ind. In accordance with Paragraph b, Section 26, of the Interstate Commerce Act as amended (Signal Inspection Law), the N. Y. C. on May 21, 1938, filed an application for approval of modifications of the Porter interlocking to remove the main-line derails and to use the levers thus gained to provide a separate lever for each crossover switch.

Automatic train stop of the intermittent inductive type is in service through this territory.

The changes were opposed by representatives of some of the train and engine service brotherhoods and other employee organizations on the grounds that safety of operation would be decreased. A hearing was held and briefs were submitted. The petitioner's witnesses testified that, in general, derails in main tracks constitute a hazard instead of providing protection, and that their use is unnecessary and inadvisable under modern operating conditions, since braking appliances and automatic signals have been greatly improved, and automatic train stop systems devised. They stated also that failure to observe a stop signal in conjunction with a derail will result in one or more accidents, but in many instances no accident necessarily results from failure to observe a signal with which no derail is used, while if a locomotive is thrown onto the ground by a derail, it may be overturned and the train buckle onto adjacent main tracks, in this way creating a potential hazard to other trains also.

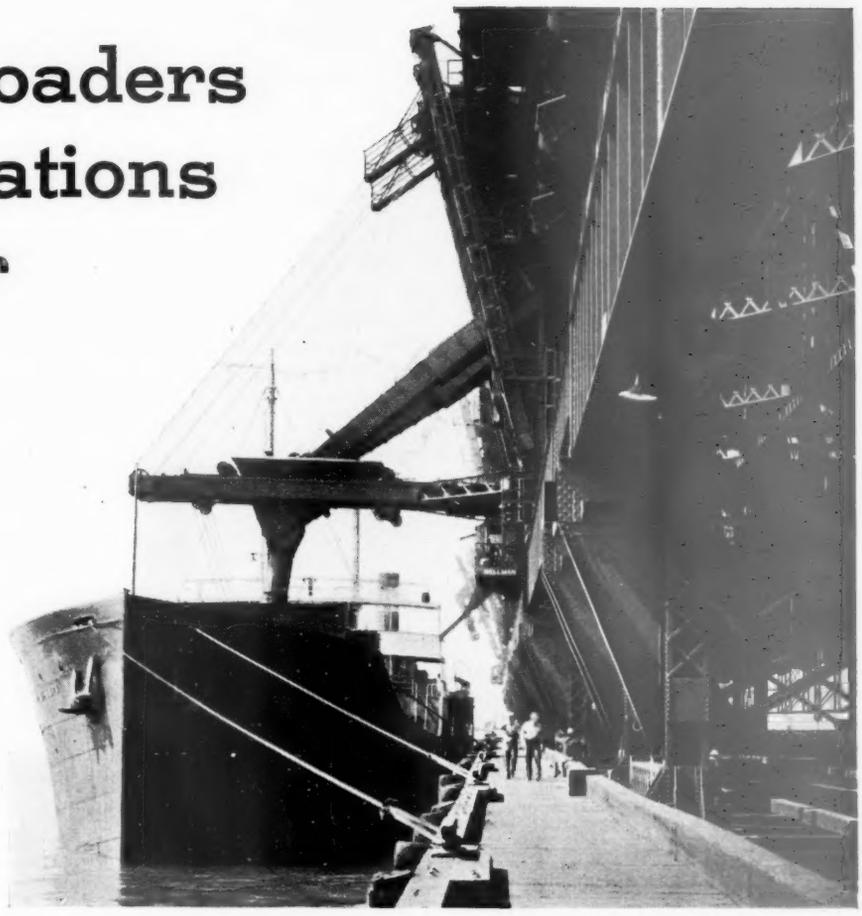
Several witnesses testified in opposition to the removal of derails. They urged that derails provide the only positive protection against side collisions at railroad intersections at grade. They claimed that enginemen are ordinarily extremely cautious in approaching points where derails are in service, and that signals, even when supplemented by automatic train stop devices, do not afford the protection required at grade crossings.

I. C. C. Sees Possible Increase of Safety

In its discussion the commission said that "it is clear that accidents have been caused by, and also averted by, the use of derails. The action of the Signal Section of the Association of American Railroads, which by resolution indicated that 'Derails should not be used in main tracks,' appears to have been reached after careful and mature consideration of the subject. While we are not to be understood as agreeing that the action indicated by this resolution should govern in every case, it seems that considerable weight should be attached to the action of that body. We are of the opinion that under the particular circumstances here shown, including the traffic involved, the physical characteristics of the tracks and the type of equipment used, we would not be justified under the provisions of Section 26 of the act as amended in withholding approval of the proposed changes. We find that removal of the derails from the main tracks and the other proposed changes as set forth in the application will not decrease safety but may reasonably be said to promote safety. We further find that approval of the petition should be granted, and an appropriate order will be entered."

Side-Wall Loaders Speed Operations at Coal Pier

Traveling machines applied to high-level structure on C. & O. incorporate many parts of high-strength steels as means of reducing load



View of One of the Loading Machines in Operation

THROUGH the application in 1937 of three traveling side-wall loading machines to one side of a conventional high-level coal pier at Newport News, Va., the Chesapeake & Ohio has achieved a marked improvement in the dispatch of vessels. Comprising a new development in coal-handling equipment, these machines embody a number of noteworthy features, among which may be mentioned the extensive use of high-strength low-alloy steels as a means of reducing to a minimum the additional loads imposed on the pier. In fact, by using such alloys for principal load-carrying members and for chutes and pans where resistance to abrasion was a factor in weight reduction, it was possible to achieve a total saving in weight of about 20 per cent as compared with conventional construction involving members of carbon steel.

Operation of Existing Pier

The existing structure to which the side-wall machines are attached is known as Pier No. 9. Briefly, its operation involves the dumping of the coal from railroad cars into 120-ton electrically-driven transfer cars by one of two dumpers at the inshore end of the pier; the raising of the latter cars 75 ft. to the top of the pier by one of two elevators, also at the inshore end; movement of the cars on tracks along each side of the pier to the desired point; the dumping of the coal from the transfer cars into pockets in the pier, from which it flows by gravity into the cargo holds of vessels; and the return of the cars to the ground level by means of a ramp track extending downward through the interior of the pier from the outshore end.

Of structural steel construction on concrete caissons with timber pile foundations, the pier is 1,200 ft. long, 73 ft. wide and 83 ft. high. It contains a total of 66 coal pockets, 33 on each side. Each pocket is provided with a discharge gate operated with portable motors and, in the original construction, coal passed from the pockets into a slide box and thence through a hinged chute directly into the hold of the vessel. By means of the slide box the height of the chute could be varied to adjust it for discharge through hatches at different levels. Because there was no way of controlling or adjusting the direction in which coal was discharged into the holds of ships, hand trimmers were extensively used.

Through experience with piers of the low-level type, the railroad learned that the time of loading could be substantially reduced by the use of telescopic chutes equipped with rotating gates at the discharge end. Hence it was apparent that better service could be given to boats loading at high-level piers by removing the chutes and slide boxes and substituting therefor a number of telescopic chutes mounted on carriages capable of moving under their own power from pocket to pocket along the side of the pier. It was decided, therefore, to apply this principle to Pier No. 9 by installing three traveling side-wall loading machines to the south side of the structure.

The New Loading Machines

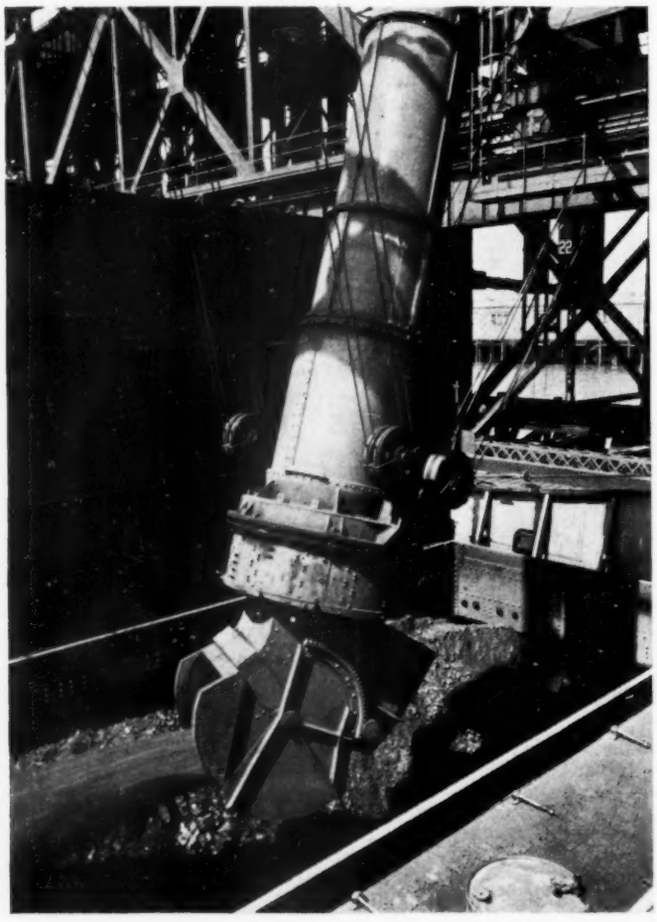
Each side-wall machine consists essentially of the traveler carriage operating on suitable runways fixed to the side and top of the pier, a boom carrying a hopper

which discharges through a telescopic chute, and a spout or pan for delivering coal from the pier pockets to the hopper. The carriage consists of a rectangular frame of structural steel construction which, by means of wheels and guides, is held up against the side of the pier in such a position that the lower end fits closely against the side-wall of the pier while the upper end is inclined outward somewhat in order to clear the overhanging deck structure of the pier. This frame has a height of about 66 ft. and a width (parallel with the pier) of 37 ft.

At its lower end the carriage is mounted on two four-wheel trucks, embodying double-flanged wheels, which operate on a track consisting of two lines of 131-lb. R. E. rails placed 21 in. apart between gage lines. Each rail is supported on the top flange of a longitudinal plate girder, these girders spanning between brackets attached to the outside columns of the pier structure and forming a continuous runway having a length of about 975 ft. Horizontal thrust at the lower end of the carriage frame is transmitted to the pier by means of two rollers mounted in a horizontal plane, which bear against a runway consisting of a continuous metal plate. The latter is fillet-welded to the outside flange of a wide-flange beam that is fastened to the side of the pier somewhat above the carriage track with the web in a horizontal position. This beam also serves as a walkway, providing access to the control cabins of the loading machines, and is equipped with suitable hand rails.

Two rollers mounted in a horizontal plane are also placed at the top of each machine for transmitting the horizontal reaction to the pier, which here is in the outward direction or away from the center line of the structure. These rollers are mounted in an ell-shaped extension, which extends over the top of the pier, and bear against a continuous plate runway that is welded to the inside flange (that nearest the pier center line) of a wide-flange beam that is fastened to the cross girders of the pier with the web also in a horizontal position. To prevent the accumulation of water between the flanges of this beam, the space is filled with an asphaltic compound.

The boom of each machine is attached to the lower end of the carriage frame by means of pin connections, and consists, in each case, of two parallel I-beams 53 ft. long. When the loader is in operation the boom is in a horizontal position, but when the machine is not in use the boom is folded up against the carriage frame, in which position it is at an angle of about 66½ deg. with the horizontal. The hopper carrying the telescopic chute is supported on and between the two members comprising the boom.



This View of the Lower End of One of the Telescopic Chutes Shows How the Coal Is Distributed Within the Hold

Features of Telescopic Chute

By means of a cable-and-pulley arrangement, the telescopic chute may be shortened or lengthened as desired and it may be swung through an angle of 20 deg. from the vertical inward or outward, with the boom in a horizontal position. At its lower end the chute is fitted with a motor-operated full-revolving trimmer, in the side of which is incorporated the discharge gate. Thus coal is discharged from the gate in a nearly horizontal direction and because of the revolvable feature of the trimmer, it can be distributed as desired rather than falling in a pile, as was the case with the old method of loading. It is this feature, aided by the flexibility inherent in the telescopic chute, that makes it possible to achieve an even distribution of coal in the hold of the vessel being loaded.

Moreover, one of the three towers is fitted with a mechanical trimmer at the lower end of the chute, by means of which an even greater range of distribution is achieved. The essential feature of this device is an endless belt. Coal discharged from the chute falls on this belt and is thrown with sufficient force to place the coal in the corners of the hold. Thus, as the mechanical trimmer rotates, the coal is distributed to points in the hold where it could not otherwise be placed except by hand.

At a point somewhat above the boom is located the spout for delivering coal from the pier pockets to the hopper. At its upper or inner end the spout terminates in a pan which registers closely with the discharge gates of the coal pockets in the pier. This pan is about 36 ft. wide (parallel with the pier) and, as the pockets are on 30-ft. centers, the pan is at all times in a position to receive coal from one of the bins. Below the pan the spout divides into two legs which converge again at the outer end to form a discharge opening over the movable hopper on the boom. When the spout is in the out-of-service position it is folded up into the carriage frame behind the boom.

All Parts are Motor-Operated

The carriage travel and all movable parts of each machine, such as the boom, the spout, the hopper, the telescopic chute, the discharge gate and the trimmer rotate, are operated by individual electric motors. The travel motor is a 50-hp. unit which is capable of operating the machine in either direction at a rate of 60 ft. per min. Power for operating the various motors on the machine is furnished by a motor-generator set located in the company's existing sub-station at Newport News, the transmission of power to the coal loaders being ac-

Looking Along the Runway on Top of the Pier. The Top of the Bunkering Machine Is Shown in the Background

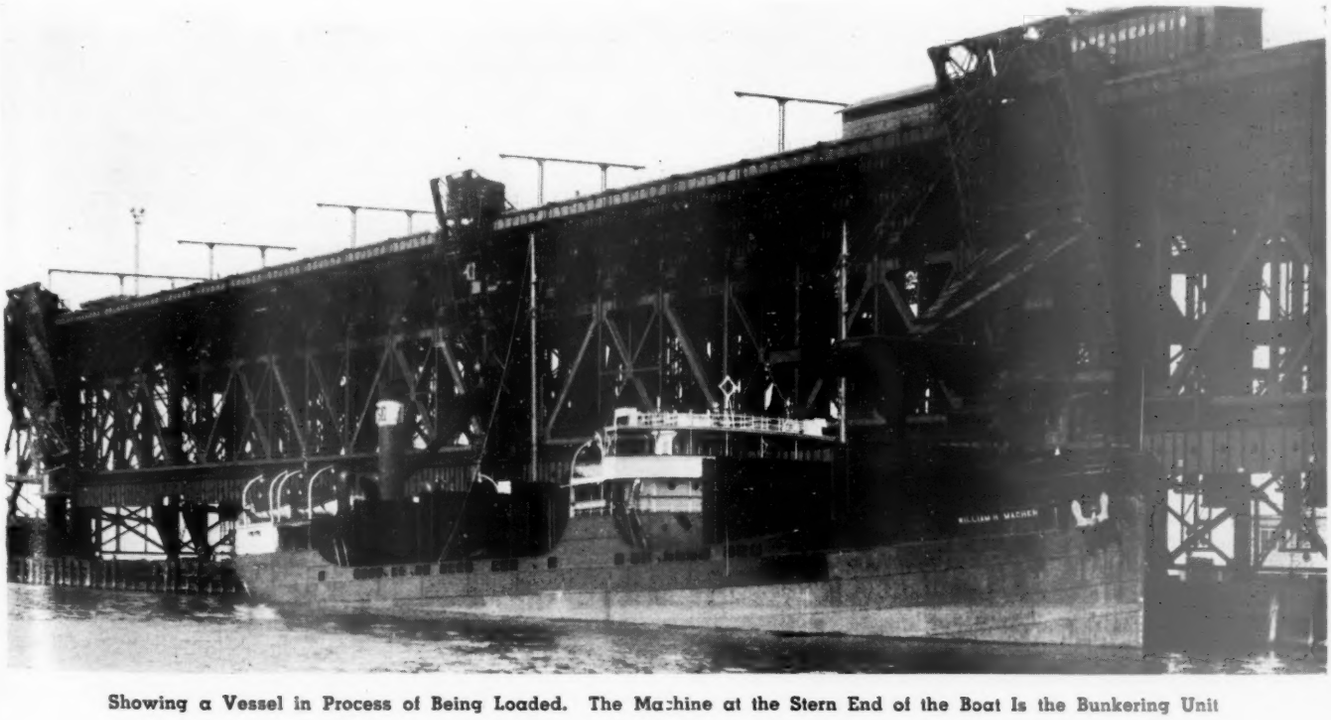
complished by means of a sliding-contact system. The motor-generator set consists of a 220-volt synchronous motor operating a 550-volt direct-current generator, and all operating motors on the towers are wound for this type of current. Power for illumination is provided by a motor-generator set on each machine, while another set furnishes current for operating the communication system. Adequate illumination is provided for night operation by means of four 1,500-watt flood-light projectors, three on the boom and one at the top of the frame.

All operating controls for each machine are located in the operator's cabin, which is fastened to the main frame at a point just below the boom, from which position the operator has a clear view of the loading operations. From this cabin the operator controls the carriage travel, the raising and lowering of the boom and spout, all movements of the telescopic chute, the trimmer and the discharge gate, and the operation of the bin gates. The original bin gates are used in the new set-up and the motors operating them receive power from the carriage by means of seven conductor bars, each 29 ft. long, which are mounted on the carriage and engage sliding contact shoes on the motor at the bin gate.

To insure safe and efficient operation of the side-wall loading machines, they are provided with a number of automatic control features. Among these may be mentioned the spacer arms that prevent the machines from moving too close together, thereby bringing about an undesirable concentration of load. These arms, which are each 17 ft. $3\frac{3}{16}$ in. in length and extend from each machine in a direction parallel with the line of movement. are fitted with limit switches that are designed to cut out the travel motors if adjacent machines should be brought sufficiently close together to cause their spacer arms to contact each other. Among other automatic control features is one incorporated in the bin gates by means of which the gates are caused to close automatically if the machine should move away before they are closed in the usual manner.

Communication System

To permit the transmission of instructions from the trimmer foreman on the vessel being loaded to the tower operator and to the top of the pier, a two-way telephone system is provided, with a hand set on the vessel and a loud speaker and a transmitter in the operator's cabin and on the upper deck of the tower. The system is normally hooked up for communication between the trimmer foreman and the operator, while the loud speaker on



Showing a Vessel in Process of Being Loaded. The Machine at the Stern End of the Boat Is the Bunkering Unit

top permits the trimmer foreman to request and receive information as to the amount of coal left in the bin. A separate circuit is provided from the trimmer foreman to a loud speaker in the pier foreman's office and this circuit can be utilized by the trimmer foreman by changing the connection of his hand set. Loud speakers or bells provide two-way signaling.

With the side-wall loading machines in use, the method of operating the pier has not been altered up to the point of depositing the coal in the pier pockets. After this step, however, the flow of coal into the ships is controlled entirely by the traveling loaders. When it is desired to draw coal from a designated pocket or bin, one of the machines is moved into the proper position opposite that pocket and, if they are in the raised position, the boom and spout are lowered to the operating position.

The operator then opens the bin gate by a push-button control, allowing the coal to flow through the spout into the hopper and thence into the telescopic chute. By means of the discharge gate, which is also operated by a push button, the operator at all times has positive control over the flow of coal from the telescopic chute into the cargo hold. Also, by properly manipulating the chute —that is, by changing its length by swinging it in or out—and with the aid of the trimmer rotate, he can place the coal in the desired position in the hold.

To permit coal to be placed in the bunkers of vessels while their cargo holds are being loaded without diverting for this purpose one of the cargo-loading machines, a traveling bunkering machine was also provided on the side of the pier. This unit consists simply of one of the chutes and slide boxes that were removed from the pier and is mounted in a carriage frame, similar to but smaller than that carrying the loading machines, which is designed to operate under its own power on the runway system serving the larger machines.

Alloy Steels Reduce Weight

Because the application of the side-wall machines to the pier imposed a load which that structure was not originally designed to carry, it was imperative that the weight of the machines be limited to a minimum. Originally the design of the machines was based on the use of conventional materials, including low-carbon steel for the structural members and castings for the mechanical parts. With this type of construction, however, the weight of the machines proved to be prohibitive and, as a means of achieving a substantial reduction in the weight, it was decided to employ high-strength alloy steels for the main members of the boom and certain other parts and to substitute welded construction for the heavier castings.

For the boom members Cor-Ten steel was chosen. This is a chromium-copper-phosphorus-low-carbon steel alloy having a yield strength of 45,000 to 50,000 lb. per sq. in. and an ultimate strength of about 75,000 lb. per sq. in. It is also said to have a high resistance to corrosion. Using this steel for the main boom members, 30-in. 116-lb. I-beams proved to be of ample strength and these were rolled in lengths of 53 ft. If carbon steel had been used for these members, 36-in. I-beams would have been required and the weight of the beams would have been increased from 50,000 lb. to 64,000 lb. for the three machines. Thus, without sacrificing strength, a direct saving in weight of about 23.5 per cent was achieved.

Those parts of the coal towers that are subjected to the abrasive action of the coal, such as the pans, spouts, hoppers and telescopic chutes, were constructed of Man-Ten steel. This is a carbon-manganese-copper steel having a somewhat higher yield strength and ultimate strength than Cor-Ten steel and the additional advantage of high resistance to abrasion. The design called for the use of $\frac{5}{16}$-in. plates for the bottom and $\frac{1}{4}$-in. plates for the sides of the pan, the spout and the hopper, and $\frac{1}{4}$-in. plates for the telescopic chute. If conventional construction had been employed, the design would probably have involved the use of a $\frac{1}{4}$-in. shell plate for the pans, spout and hopper, to serve as a permanent frame for high-carbon steel wearing plates of probably the same thickness as the Man-Ten plates actually used. Because of wear, these plates would have required renewal from time to time. Using conventional construction, the telescopic chutes would probably have been constructed of $\frac{5}{16}$-in. standard steel plates. It is estimated that the use of Man-Ten steel for those parts subject to abrasion resulted in a direct saving in weight of about 30 per cent as compared with conventional construction.

When Not in Operation, the Booms and Spouts of the Machines Are Folded Up Against the Side of the Pier

Welded Mechanical Parts

An example of the effective use of welded mechanical parts as a means of reducing weight is afforded by the boom-hoist mechanisms embodied in the side-wall machines. The hoist drums consist in each case of inside-ribbed web plates and a shell of $1\frac{3}{8}$-in. rolled steel, the entire unit being fabricated by welding. Drums of this type are said to have a weight 20 per cent less than that of conventional cast-steel drums. The cast-steel bearings of the drum are welded to the flanges of the beams comprising the frame, which is likewise of welded construction, and are machined in place. Similar welded mechanical details were utilized throughout the structure and in the aggregate effected a substantial reduction in weight as compared with conventional construction.

In addition to the direction savings in weight effected by the use of high-strength steels and welded mechanical details in the machines, substantial indirect weight reductions were achieved by reason of the fact that the reduced weight of the different parts made possible the use of lighter sections for certain other structural members in the machines and also for the runway guides on the pier and for the members used in strengthening the pier structure.

As stated previously, the principal load-carrying members of the supporting structure for the side-wall machines are the plate girders that carry the rails comprising the main runway. These girders are in 90-ft. and 30-ft. lengths, the former spanning between towers in the pier structure while the latter comprise the tower spans. The longer girders have web plates 90-in. in depth and these plates, together with the flange angles and cover plates, are of silicon steel. The 30-ft. girders have web plates 54 in. in depth and are fabricated of carbon steel. Because of its wear-resisting qualities, Man-Ten steel was used for the wearing plates on the runways for the horizontal wheels at the top and near the bottom of each machine. In each case the wearing plate consists of a continuous 4-in. by 7/8-in. plate, fillet-welded to the flange of the runway beam.

To adapt the pier structure to the conditions of increased and eccentric loading imposed by the coal towers, it was necessary to reinforce existing members of the pier on an extensive scale and to apply additional members at certain locations. Much of the diagonal bracing, particularly on the side of the pier carrying the towers, was reinforced, as were certain of the horizontal struts, while additional horizontal struts were applied where needed.

In connection with the coal dumping operation, it is often desirable to sprinkle the coal with water to minimize dust during cargo loading and more particularly for the destination unloading operation. The installation of 2-in. spring-closing, self-draining valves on 62 coal pockets, with a perforated header over the coal gate, provides for application of water while coal is flowing from the pockets. The operation of the valves and the flow of water is controlled by a steel cable and small winch located on the top deck of the pier. In order to have an adequate water supply available at a fairly constant head, the system is supplied from a 100,000-gal. capacity, elevated steel tank through suitable pipe lines.

With the installation of the side-wall loading machines, the rate of coal flow through the coal gates was increased, requiring a greater volume of water to secure the desired moisture content. This was accomplished by installing 3-in. spring-closing valves on 11 pockets or one berth. The sprinkler arrangement was changed to a 3-in. header over the gate, with the addition of two side and under-shot sprinklers so adjusted as to apply water to all sides of the coal stream. With this application, a sufficient flow of water is available with an even distribution of moisture throughout the coal. This feature provides for a graduated water flow permitting the sprinkling of coal as requested by the shipper, from a low percentage to a maximum of 2.5 per cent with a coal flow from the chute of 54 tons per min.

This project was planned and executed under the general supervision of C. W. Johns, chief engineer, and T. F. Barton, superintendent motive power, of the Chesapeake & Ohio. The loading machines were designed, fabricated and erected by the Wellman Engineering Company, Cleveland, Ohio, under patents which this company controls. The strengthening of the pier structure and the erection of the tower runways and of the bunkering machine were carried out by company forces.

Communications . . .

A Northwest R. R. Museum

MINNEAPOLIS, MINN.

TO THE EDITOR:

The old time railroading that helped to build up a once heavily-wooded Northwest may live again in the concourse of the Union Depot at St. Paul, Minn., for visitors and casual travelers to admire. Several railroad men and other Twin Citians have tentatively approved the idea of a railroad museum where old photos, lithographs and other exhibits of by-gone days can be shown, in which those railroads northwest of Chicago and touching the Twin Cities might participate. Railroad officers voice no objection to housing of relics in the Union Depot concourse.

It has been suggested that an organization be sponsored under the title Northwest Railway Historical Society, whose function would be to operate the museum and issue a quarterly bulletin on northwest railroad history, in co-operation with municipal, county and state historical societies. It might be affiliated with the Railway & Locomotive Historical Society but retain its exhibit at St. Paul. The private museums of the Omaha, Great Northern, Northern Pacific, North Western, Rock Island, and other local roads, might be merged with this central museum. Carl R. Gray, Jr., executive vice-president, C. St. P. M. & O., and other railroad officers have indicated their willingness to hunt up material. It is hoped the Great Northern's "William Crooks" engine of 1861 and the C. & N. W.'s "Pioneer" of 1836, the Northern Pacific's "Minnetonka", a saddle-back engine of 1870, and the Omaha's "Old Tyme" train carrying a business car of 1872, might, among others, be assigned to the projected museum.

ALDEN E. MILLER,
Trainman, C. St. P. M. & O.

"Guest of a Gracious Host"

BLAIRSVILLE, PENNSYLVANIA.

TO THE EDITOR:

The writer of this letter is not a railroad man. But he has been a railroad enthusiast ever since the days of open-end, wooden coaches and frock-coated passenger conductors. He has helped to arrange many a railroad trip for other people and has himself seen nearly every state in the Union from Pullman windows. Now he begs permission to add three paragraphs to the thought expressed in the timely editorial in the March 11 number of *Railway Age*, titled "More Consistent Cleanliness." Something like this:

In this connection, it is possible that the railroads are overlooking a bit of smart salesmanship by continuing to neglect the matter of cleanliness and freshness in their passenger stations. A prospective bus passenger, except in the more important terminals, buys his ticket and awaits his bus in a news stand, a restaurant or a hotel where surroundings are not always congenial nor accommodations adequate or anywhere near adequate.

The railroads own in nearly every village on their lines, a passenger station building that could be made—by the application of a few gallons of paint—attractive, fresh looking and business-like. The washrooms in small town stations can become symbols of hospitality to the patrons of the road. A supply of towels, some evidence of periodic inspection and a self-evident assurance that the patron is not sharing the accommodations with hoboes and other presumably bathless non-producers of revenue might be a smart investment.

A passenger who starts a trip from a neat (even though ancient) waiting room and who steps later from his train into the friendly welcome of another trimly kept "depot" is certain to feel more keenly that he is the guest of a gracious host, especially since the magically improved cleanliness of railroad cars has emphasized the railroads' willingness to serve well their customers. Perhaps the cleaning up of the small town stations would be too costly. But is it not possible that insufficient thought has been given to this angle of passenger solicitation?

GEORGE M. HILL.

NEWS

Canada Prepares For Royal Pair

Train being readied at Point St. Charles will have six cars in royal blue

To care for the travel needs of their Majesties, the King and Queen of England (and of Canada too) on the North American continent this year, the Canadian National is preparing in its Point St. Charles shops at Montreal, Que., six cars for the royal train which will carry the party in both Canada and the United States. The cars include two private cars of the Canadian governor-general, Nos. 1 and 2, in which the King and Queen will ride; Canadian National business car No. 99 in which the Lord-in-Waiting and the Lord Chamberlain will travel; Canadian National compartment cars "Atlantic" and "Pacific," in which other members of the royal party will be accommodated; and one of the recently-built Canadian National diners seating 40 persons. Car No. 1 contains two main bedrooms with dressing rooms and private bath, a sitting room for the King and Queen and two bedrooms for members of the royal staff. Car No. 2 contains a large lounge, as well as an office, a dining room and kitchen, and two bedrooms with a bathroom for members of the royal staff. Car No. 99 contains two main bedrooms with bath, lounge dining room, kitchen, also a bedroom for servants.

The exterior color scheme of the train will be royal blue, with silver panels between the windows, and a horizontal gold stripe above and below the windows, the blue color extending above the windows to the roof line, which will have a gun-metal color. The cars in which the King and Queen will travel will bear the royal coat-of-arms in the center of each car below the windows. The remaining equipment will bear the royal cypher-and-crown in the center below the windows and a royal crown at each end of the blue stripe between the top of the windows and the roof line. All cars are air-conditioned, and the train is being equipped with an inter-communication telephone system and facilities for outside wire connections at all stops. Four locomotives for hauling the royal train, including one 6400, two 6000 and one Pacific class types, are being finished in royal blue. In addition, an oil-burner is being prepared for hauling the train through the western mountains.

More than 2,000 employees will be required for the operation and service of the royal train during its progress over the lines of the Canadian National. For actual operation of the train, there are now being selected 36 locomotive crews of which 15 will operate in the Central region, 15 in the Western region and 6 in the Atlantic region. For service back of the tender, 19 conductors and 43 trainmen will be selected. These 134 men who directly operate the royal train form but a small portion of the more than 2,000 whose services will be required to ride the train, to carry out duties at stations and terminals, service the train and generally expedite the movement. Officers of the Canadian National actually riding on the royal train will include the regional vice-presidents throughout their respective jurisdictions together with all general superintendents. In addition, numerous experts in charge of air-conditioning, electric lighting and other mechanical features and telegraph operators will be attached to the train.

Two-Months Net Deficit Was $33,085,000

Class I railroads of the United States in the first two months of 1939 had a net deficit of $33,085,000 after fixed charges, the Association of American Railroads announced on April 26. For the first two months of 1938, Class I roads had a net deficit of $77,725,000 after fixed charges.

The February net deficit was $24,364,000, compared with a net deficit of $44,405,000 after fixed charges in February 1938.

Senate Passes Long Island Bill

The Senate has passed and sent to the House S. 1034, a bill to authorize the Secretary of War to terminate certain leases of the Long Island at the United States Army Base at Bay Ridge, Brooklyn, N. Y.

New All-Pullman Train for San Francisco Fair Visitors

A new extra fare all-Pullman train, the "Treasure Island", will be placed in service between Chicago and San Francisco, Cal., by the Chicago & North Western, the Union Pacific and the Southern Pacific on, May 22, to accommodate visitors to the Golden Gate International Exposition. It will operate on the same schedule as the "Forty Niner" of these roads, with departure from Chicago on the 4th, 10th, 16th, 22nd and 28th, and from San Francisco on the 1st, 7th, 13th, and 25th of each month.

Fuel Shortage Waxes Serious

Phoebe Snow would find it like the good old days on some Eastern roads

The month-old tie-up in coal mining operations throughout the Appalachian regions has diminished storage piles to an alarming extent and in some cases has driven the railroads to scratch for fuel in mining territories not yet affected by the deadlock between C. I. O.'s John L. Lewis and the operators' committee. To ease the shortage of fuel coal in Ohio and Michigan, the Interstate Commerce Commission, on April 21, authorized the railroads to put into effect on one day's notice reduced rates on coal from mines in Indiana, Illinois and western Kentucky to points in Ohio and Michigan. Under this provision the carriers may put into effect reduced rates in the first instance or to establish rates by new routes from these areas. The life of the rates will be limited to 90 days.

The Pocahontas roads have probably suffered the greatest loss of traffic. The Chesapeake & Ohio, whose coal business is about 85 per cent of total freight traffic, has furloughed a majority of its mechanical forces and white-leaded temporarily its heavy locomotives. Coal shipments in the first three weeks of April aggregated less than 600 cars as compared with over 32,000 cars in the corresponding period of 1938. Both the C. & O.'s and Norfolk & Western's tidewater coal piers at Newport News, Va., and Lambert's Point, respectively are working on severely reduced schedules. The Virginian, while it is hauling virtually no prepared sizes of coal, is bringing down a large volume of refuse or "bone" coal as mine operators are reducing their piles in a market which will pay three to four dollars per ton for stuff that ordinarily brings less than 90 cents. The road has already dumped about 200,000 gross tons of this coal at its Sewall's Point piers.

Many of the Eastern roads with lines extending into the middle west coal fields, such as the Pennsylvania and the New York Central, have changed the usual routing of supply coal to tap these supplies. The Central reports that it had 45 days' supply on hand as of April 1 and that it is replenishing its supply from mines on the Big Four.

It is reported that other lines are receiving stop-gap supplies from the

(*Continued on page 753*)

Pelley Cites 1938 Rail Safety Record

Best "general" showing in 50 years is reviewed by A. A. R. president

The best general safety record in fifty years was established by the railroads of the United States in 1938, J. J. Pelley, president of the Association of American Railroads, announced on April 27. The number of train accidents, as compared with the number of miles run by trains, was the lowest on record in 1938. The actual number of train accidents in 1938 was one-third less than in 1937, and two-thirds less than in 1929.

The accident record for employees, too, was the best in fifty years. Fatalities to employees on duty resulting from all kinds of accidents in 1938 totaled 479 compared with 666 in 1937 and 1,348 in 1929. The number of such fatalities in 1938 was a reduction of 28.1 per cent compared with 1937 and a reduction of 64.5 per cent compared with 1929. Compared with the number of man-hours worked, there was a reduction in 1938 under 1937 of 13.5 per cent in the frequency of fatalities to employees in 1938 and a reduction of 31.6 per cent under 1929. Non-fatal injuries to employees in 1938 declined 31.6 per cent in number and 17.6 per cent in frequency on the basis of man-hours worked compared with 1937, and declined 73.1 per cent and 50.8 per cent respectively compared with 1929.

Passenger fatalities resulting from train accidents totaled 52 in 1938 compared with 3 in 1937. Of the total number of passenger fatalities in 1938, 40 resulted from one accident for which a cloudburst was responsible. In another accident resulting from man-failure, eight passengers were killed in a collision. In another accident three passengers were fatally injured as a result of a derailment caused by a passenger train colliding with a truck at a railroad-highway grade crossing. The other passenger fatality resulted from a collision of two passenger trains.

Fewer persons lost their lives in accidents at highway-railroad grade crossings in 1938 than in any year since 1915 with the exception of one year—1933. Such fatalities in 1938 totaled 1,517, a decrease of 358 compared with 1937. At the same time there was a reduction of 1,118 in the number of persons injured. This means there was a reduction of 21.1 per cent in the number of casualties resulting from grade crossing accidents in 1938 compared with the preceding year.

Casualties to trespassers on railroad property declined from 2,569 fatalities and 2,629 non-fatal injuries in 1937 to 2,298 fatalities and 2,429 non-fatal injuries in 1938, or a decrease of 9.1 per cent. This represents, however, an increase in the frequency rate of casualties to trespassers since total train movements were reduced by a slightly greater per cent than the casualties.

Taking casualties for all classes of persons—passengers, employees, persons at highway-railroad grade crossings, and trespassers—the number of fatalities in 1938 was reduced by 15.9 per cent and the number of non-fatal injuries was reduced by 25.7 per cent compared with 1937. Compared with 1929, the number of fatalities in 1938 was reduced by 30.7 per cent and the number of non-fatal injuries was reduced by 64.6 per cent.

Roads Getting Set for Handling of Wheat Harvest

With the first estimate of the Department of Agriculture indicating, as of April 1, a winter wheat crop of 549,219,000 bushels this year, preliminary steps have been taken by the Car Service Division of the Association of American Railroads to insure an adequate supply of box cars to move this crop to market.

All railroads have been circularized with a view to concentrating approximately 40,000 cars on wheat loading lines prior to the beginning of harvesting early in June. Railroads throughout the country were requested to issue orders, effective at once, for the immediate return of all western owned box cars.

While the forecast of this year's winter wheat crop is 20 per cent below last year's production, it is nevertheless close to the last ten-year average and therefore calls for the same protective measures which have been taken by the railroads in recent years to avoid car supply difficulties. By virtue of the early planning of the railroads last year, drastic orders to ensure an adequate car supply were unnecessary, even with new records being established in some of leading terminal markets.

Car Service Division officials are confident that this year's winter wheat crop will be handled without any difficulty. Nearly half of the entire wheat crop is harvested in the southwestern group of states. The movement to elevators in huge volume in a comparatively few weeks generally starts in that section early in June. Cars belonging to the early wheat loading roads are expected to start moving homeward almost immediately, with those of the central western lines and the northwestern roads, which sections harvest their wheat next, being headed in the direction of their respective territories shortly thereafter.

It is expected that factors in the grain trade will cooperate with the railroads in the handling of this year's crop in the same manner as heretofore. Terminal committees, representing the shippers and receivers throughout the grain producing states, have been created in recent years and through their active cooperation with the railroads and special representatives of the Car Service Division the wheat movement has been greatly accelerated.

Britain's Transport Minister Named Powerful Minister of Supply

British Prime Minister Chamberlain has announced the establishment of a Ministry of Supply to place the country's industrial machinery on a war-time basis and has named Leslie Burgin, present Minister of Transport, to head the new cabinet post. Mr. Burgin's successor in the transport portfolio has not yet been named.

Great Western Plan Changed by I. C. C.

Deepening of depression cited as a reason for increasing road's working capital

Due to the deepening of the depression and the uncertainty of the trend of future earnings, Division 4 of the Interstate Commerce Commission has modified its recently-issued final plan of reorganization for the Chicago Great Western. The revised report of the commission brings out clearly some of the difficulties that are confronting those railroads which are striving to emerge from bankruptcy.

Division 4 found it necessary, due to the increased severity of the depression during 1938 and a consequent impairment of the company's cash position, to modify the original plan so as to provide for the issuance of obligations upon reorganization to provide for at least an additional $800,000 for working capital. The modified plan also makes provision for greater flexibility in future financing. As a result of the changes, both the capitalization and the fixed interest requirements will be increased.

Under the revised plan, the amount of new first mortgage four per cent bonds to be issued upon reorganization will be increased from $15,586,350 to $16,386,350. Out of this amount, $2,050,000 will be used to provide funds for working capital instead of the $1,250,000 originally provided by the commission. The $2,050,000 would be a part of $6,226,690 which is needed by the C. G. W. to carry out its reorganization—to pay the Reconstruction Finance Corporation and the Railroad Credit Corporation debt and to buy certain properties of the St. Paul Bridge & Terminal.

The commission pointed out that the modified plan could not be put into effect unless sufficient bonds can be sold at par to obtain the necessary funds for the reorganization. In the event that the new bonds cannot be sold at par, the commission included provisions in the plan whereby the money could be obtained from the R. F. C. by the pledge of new bonds or from private sources through the same method.

The fixed interest requirements would be increased from $623,454 to $849,000 annually the first year because of the increase in the amount of first mortgage bonds issuable under the reorganization.

Division 4 also modified its plan so as to permit the refunding or renewal at maturity of the $500,000 Wisconsin Central first mortgage bond issue which the new company is to assume, either by the creation of a new first lien mortgage or the extension of the present mortgage. Also, in order to permit greater latitude in fulfilling obligations under the Mason City & Fort Dodge mortgage, the commission inserted alternative provisions to permit the purchase of these bonds at market value or by such other methods which will insure the rights of the bondholders. The original plan of the commission provided that the mortgage was to be cancelled and the prop-

erty conveyed to the new company, or in the alternative, the property sold at a foreclosure sale.

To provide for greater flexibility in future financing the commission further modified its original plan so as to permit the use of new first mortgage bonds and new general income bonds, within specified limits, to be issued for such purposes. However, the commission stipulated that the new first mortgage issue would always be a closed one limited to $20,000,000 and the income mortgage closed and limited to $6,500,000.

The commission also reiterated its former ruling that the plan need not be submitted to the common stockholders for a vote in view of the fact that their equity had been declared to be without value.

As amended, the revised plan provides for the following capitalization: Undisturbed equipment obligations, such principal amount as may be outstanding on the date of consummation of the plan, $4,208,122 as of January 1, 1938; Wisconsin Central first mortgage 3½ per cent assumed bonds, due January 1, 1950, $500,000; first mortgage four per cent bonds, due January 1, 1988, approximately $16,386,350, or, in lieu thereof, $10,159,660 of such bonds and a note or other evidence of indebtedness for approximately $6,226,690; general income mortgage 4½ per cent bonds, due January 1, 2038, $6,095,796; 365,747.76 shares of $50 par value five per cent preferred stock, $18,287,388; 352,283.42 shares of $50 par value common stock, $17,614,171; a total of $63,091,827.

Commissioner Mahaffie wrote a dissenting opinion in which he said that he did not consider it sound policy to lend government money in order that unearned interest on defaulted bonds might be paid. "Sound and successful reorganizations," he continued, "in my opinion, may not be effectuated unless creditors, stockholders, and those passing upon the reorganizations, adopt a realistic attitude in respect thereof. Considering the record in this proceeding, and particularly the experience of 1938, I believe that the allotment in the reorganization of fixed interest-bearing bonds to the holders of the debtor's present outstanding bonds unsound and contrary to their as well as the public interest."

A. A. R. Member Roads to Meet in New York on May 3

The forthcoming New York meeting of member roads of the Association of American Railroads will be held on May 3 instead of on April 28 as previously planned. Meanwhile the A. A. R. board of directors, held a meeting in Washington, D. C., on April 28. Before the change in the date for the member road meeting the board had scheduled its meeting for New York on April 27.

New England Railroad Club Meeting Announcement—Correction

The *Railway Age* of April 22 erroneously announced under "Club Meetings" that the New England Railroad Club would hold a meeting on May 1 at which T. V. Buckwalter of Timken Roller Bearing Company would present a paper. Mr. Buckwalter is to address the Indianapolis Car Inspection Association at the Hotel Severin, Indianapolis, Ind., on that date. The next meeting of the New England Railroad Club, to be held at the Copley-Plaza Hotel, Boston, Mass., on May 9, will be the organization's banquet and annual entertainment.

Senate Advised on Pension Act Amendments

The Railroad Retirement Board has advised the Senate committee on interstate commerce that enactment of legislation now pending in the Senate to liberalize the Railroad Retirement Act would cost an additional $174,200,000. The Board made the same type of study and reached the same conclusions in this report that it did in a similar report which it made to the House committee on interstate and foreign commerce and which was reviewed in the *Railway Age* for April 8, page 631.

Representative Whelchel, Democrat of Georgia, has introduced in the House H. R. 5989, a bill to amend the Railroad Retirement Act to provide annuities for individuals who are totally and permanently disabled and have completed fifteen years of service.

N. Y. Commission Handles First Intrastate Truck Case

The New York Public Service Commission has instituted its first investigation of an illegal motor truck operation since it was authorized to regulate and supervise intrastate common carrier and contract motor trucks July 1, 1938. The proceeding was started after a complaint had been filed that a certain truck operator of Peekskill, N. Y., is engaging in transportation of property in violation of the public service law. The complaint was filed by the Peekskill Movers' & Truckers Association and alleges that the respondent has not filed an application for a certificate of convenience and necessity nor filed evidence of insurance as required by the new law and that its operations have been outside the commercial zone of Peekskill as fixed by the commission.

Grade Crossing Elimination Rules Issued

The Secretary of Agriculture, under authority of the Federal Highway Act, has promulgated rules and regulations for administering the provisions of Section 3 of the Act of June 8, 1938, relating to the elimination of hazards to life at railroad grade crossings.

The rules provide that all projects under the act shall be initiated by the states and submitted in the same manner as other federal-aid projects, and all such projects shall be subject to all of the provisions of the rules and regulations of the Secretary for administering the Federal Highway Act, except such provisions as are inconsistent with these regulations.

The apportioned funds shall be available to pay the direct cost of the construction of the projects of the following character, exclusive of any charges for rights-of-way and/or property damage: (1) Separation of grades at crossings; (2) protection of grade crossings; (3) reconstruction of existing railroad grade-separation structures; (4) relocation of highways to eliminate grade crossings; and (5) relocation of railroads to eliminate grade crossings.

The rules further provide that state laws pursuant to which contributions are imposed upon railroads for grade-crossing projects shall be held not to apply to projects under the act.

Wheeler Submits Another Report

Senators Wheeler, Democrat of Montana and chairman of the Senate committee on interstate commerce, and Truman, Democrat of Missouri, have submitted to the Senate Part 6 of their series of reports on the work done by the subcommittee investigating railroad holding companies. The report consists of various excerpts from the record made by the subcommittee dealing with the problems of reorganization under section 77 of the Bankruptcy Act, and the equity receivership. The roads either in reorganization under section 77 or in equity receivership which are discussed in the report are the Missouri Pacific, the Wabash, the Chicago & Eastern Illinois, the Chicago Great Western, the Erie, and the Chicago, Milwaukee, St. Paul & Pacific. The report reaches no conclusion, but footnotes claim that certain deficiencies in reorganization procedure brought out in the testimony would be corrected by the pending Senate bill, S. 1869.

Enthusiast Trips

The New York, New Haven & Hartford will operate a "trip of the month" on May 6 over the Hell Gate Bridge route out of Grand Central Terminal, New York. The train will proceed first to the Van Nest electrical shops where a personally-conducted tour will be made. It will then be routed over the New York Connecting and the Long Island to Bay Ridge float yard. Return will be made via New Rochelle Junction. The fare has been set at $1.

The Central of New Jersey and Reading will operate a 375-mile inspection trip out of New York to the Rutherford, Pa., terminal of the Reading on May 7. Operated for a newly-organized fan organization known as the "Railroadians" the trip will be operated in cars attached to the "Harrisburg Special."

S. A. L. Cuts Time in Spring Schedules

The Seaboard Air Line will clip 2 hr. 35 min. from the old running time of its southbound Southern States Special; cut 2 hours from the Cotton States Special southbound and 1 hour northbound; and operate the all-coach Silver Meteor an hour earlier than at present, when the new timetable goes into effect April 30. At the same time the Orange Blossom Specials will be taken off until next season and its Diesel-electric locomotives used in the service between Washington, D. C., and Miami will be used on the Southern States Special.

Both this train and the Cotton States Special will leave New York at 11:30 a. m. instead of 9:30 a. m. as formerly. A new Pullman bedroom service will also be

offered on these trains for the first time. The all-year-round Silver Meteor will leave New York at 2:30 p. m. instead of 3:30 p. m., and arrive at Miami, Fla., at 5 p. m., instead of 6 p. m.

Leiserson Transferred from Mediation Board to N. L. R. B.

Dr. William M. Leiserson, chairman of the National Mediation Board, has been named by President Roosevelt to be a member of the National Labor Relations Board for a term expiring August 27, 1943. Dr. Leiserson, whose name was submitted to the Senate on April 25, would succeed Donald Wakefield Smith who has been serving under a recess appointment since the expiration of his term on August 27, 1938.

At his April 25 press conference President Roosevelt indicated that he would name former Representative David J. Lewis of Maryland to succeed Dr. Leiserson on the Mediation Board. Mr. Lewis was the New Deal's Maryland senatorial candidate in last fall's unsuccessful attempt to "purge" Senator Tydings.

Tie Men Will Meet

The Railway Tie Association will hold its 21st annual convention at the Hotel Netherland Plaza, Cincinnati, Ohio, on May 23-24. The program will be confined to the consideration of the reports of committees on the Checking and Splitting of Ties, Standard Adzing and Boring, Timber Conservation, Changes in Dimensions of Cross Ties during the Seasoning Period, Moisture Gradient as a Determining Factor in the Treatment of Cross Ties and on Manufacturing Practices. The Committee on Moisture Gradient is expected to recommend a standard method for determining the moisture gradient, while the Committee on Manufacturing Practice is accumulating data showing different methods employed in manufacturing cross ties, including end trimming, etc. The association will hold its annual banquet on Tuesday evening, May 23.

Advertising on Privately-Owned Freight Cars

The recently-announced revision of Mechanical Interchange Rule No. 3 to prohibit, after January 1, 1940, the acceptance in interchange of privately-owned equipment bearing advertising will not apply to cars of the mechanical designations "L" and "T", according to a recent ruling of the Association of American Railroads. The "L" and "T" designations are special and tank car types which the railroads do not obligate themselves to furnish. As noted in the *Railway Age* of November 12, 1938, page 719, the revision came about when the railroads were advised that the Interstate Commerce Commission was of the opinion that the principles laid down in Use of Privately Owned Refrigerator Cars (201 I. C. C. 323, 382) should be applied to all privately-owned cars used in interstate commerce.

Corrected Inventories

On page 653 of the *Railway Age* of April 15 the Chicago Great Western's ratio of material on hand on December 31, 1938, to annual operating expenses should be 4.9 per cent instead of 49.0 per cent and the stock on hand, based on the average monthly consumption in 1938, should be 1.4 months instead of 14.4 months.

In the table on page 649 of the same article showing monthly inventories of Class I railroads in the aggregate, values listed as cross ties are store stocks, values listed as store stocks are scrap and those listed as scrap are superseded. Cross tie values are missing from the table and will be furnished on request.

March Locomotive Shipments

Twenty-three locomotives, including 19 Diesel-electrics and two steam-electrics for domestic service and two steam locomotives for export, were shipped by the country's principal manufacturing plants during March, according to reports received by the Department of Commerce's Bureau of the Census. This compares with March, 1938, shipments of 48 locomotives, including 26 steam and 22 Diesel-electrics, all for domestic service. The cumulative total for the first three 1939 months was 63, as compared with 99 in last year's first quarter.

Unfilled orders at the close of March totaled 129 locomotives, including 60 steam, 26 electrics and 33 Diesel-electrics for domestic service, and four steam, four electrics and two Diesel-electrics for export. As of March 31, 1938, there were unfilled orders for 119 locomotives, including 74 steam, 26 electrics and nine Diesel-electrics for domestic service, and 10 steam for export.

Correction—California Caravan Act

The story in last week's issue on the United States Supreme Court's decision on the California Caravan Act was incomplete in that it failed to make clear that California is still collecting $15 for each new car driven into the state. Of that total $7.50 is now allocated to the upkeep of the highways and the remainder is used for the expense of administering the caravan law and the extra cost of policing the highways. The previous law, which the Supreme Court invalidated, levied a tax of $15, but the State argued that the charge was entirely for the administration of the law, and the Court held that this was unreasonable. Under the present law, the legislature divided the charge and declared it the policy of the state to charge half of the tax for the upkeep of the highways due to the wear caused by caravaning and the other half for administrative expense including the added cost of policing the highways.

I. C. C. Decisions in Motor Cases

Three railroad affiliates have been conditionally authorized to purchase motor truck lines in recent decisions of the Interstate Commerce Commission's Division 5. The transactions involved are the purchase by the Rock Island Motor Transit Company, affiliate of the Chicago, Rock Island & Pacific, of the Clark Transportation's operating rights on a 211-mile route between Kansas City, Mo., and Des Moines, Iowa; the purchase by the Missouri Pacific Freight Transport Company, affiliate of the Missouri Pacific, of the A. F. Steele Truck Line's 27-mile route between Waco, Tex., and Marlin, and the Freeport-Houston Truck Line's 65-mile between Houston, Tex., and Freeport; the purchase by the Frisco Transportation Company, affiliate of the St. Louis-San Francisco, of the J. W. Parker Truck Line's 75-mile route between Blytheville, Ark., and Memphis, Tenn., and the 92-mile route of Tolson's Transfer between Walnut Ridge, Ark., and Memphis.

Commissioner Rogers dissented in the Frisco Transportation Company case; while the other two brought forth unanimous reports from Division 5.

Division 5 of the Interstate Commerce Commission has authorized the Southern Pacific to acquire control of the Pacific Motor Trucking Company from the Pacific Motor Transport Company by purchase of the former's capital stock.

January Accident Statistics

The Interstate Commerce Commission's completed statistics of steam railway accidents for January now in preparation for the printer, will show:

Item	Month of January 1939	1938
Number of train accidents	500	525
Number of casualties in train, train-service, and nontrain accidents:		
Trespassers:		
Killed	114	136
Injured	140	149
Passengers on trains:		
(a) In train accidents*		
Killed	...	...
Injured	20	5
(b) In train-service accidents		
Killed	4	2
Injured	146	205
Travelers not on trains:		
Killed	1	...
Injured	89	82
Employees on duty:		
Killed	31	45
Injured	1,414	1,462
All other nontrespassers:†		
Killed	133	158
Injured	553	640
Total—All classes of persons:		
Killed	283	341
Injured	2,362	2,543

* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former cause damage of more than $150 to railway property.

† Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and nontrespassers*, were as follows:

Number of accidents	364	378
Persons:		
Killed	137	160
Injured	423	471

Club Meetings

The Traffic Club of New York will hold its next luncheon meeting at the Hotel Biltmore, New York, May 2 at 12:15 p. m. The guest speaker will be Luther M. Walter, trustee, Chicago Great Western, who will talk on "Some Needed Legislation by Congress Dealing with the Railroad Situation." The speaker was formerly with the Interstate Commerce Commission and is now a member of the law firm of Walter, Burchmore & Belnap of Chicago.

The Committee on Railroad Support will hold a meeting on May 3 in Room 808, Pennsylvania station, New York. At that time a travel motion picture will be offered by the Pennsylvania, following which an open discussion will be held on the general topic of increasing sales of railroad

service. In addition a report will be given on the meeting which members held with Senator Wheeler in Washington, D. C., on April 22 concerning proposed railroad legislation.

New Equipment Installed

Class I railroads in the first three months of 1939 put in service 5,104 new freight cars, according to the Association of American Railroads. Of that number 2,382 were installed in March. In the first three months of 1938 Class I roads put 4,362 in service.

New steam locomotives put in service in the first three months of 1939 totaled eight compared with 68 in the same period of 1938. New electric and Diesel-electric locomotives installed in the three months' period this year totaled 46 compared with 40 in the same period last year.

Class I railroads on April 1 had 6,502 new freight cars on order compared with 5,825 on the same day last year, and 6,788 on March 1, 1939. New steam locomotives on order on April 1 totaled 62, compared with 63 on March 1, and 84 on April 1 last year. New electric and Diesel-electric locomotives on order on April 1 numbered 33 compared with 38 on March 1, and 19 one year ago.

Freight cars and locomotives leased or otherwise acquired are not included in the above figures.

Ohio Solon Asks Study of "Railroad Problem"

The Congressional Record for April 20 contains an extension of remarks of George H. Bender, Republican Representative-at-large from Ohio, on the subject, "Are We Deserting Our Railroads?" During his address to the House, Mr. Bender told his hearers that there is a definite need for a thorough study of the problem of the railroads. "We must know," he continued, "more of the facts concerning the diversion of traffic by other modes of transportation, and the reasons for this growing competition. We must properly evaluate the subsidy which is unconsciously given to private trucking interest through the use of publicly built and publicly maintained highway networks connecting every corner of the Nation."

The Ohio Representative concluded his short speech by adding that "Not one of these considerations will result in a clear-cut program which will restore prosperity at one stroke. But the study must be undertaken quickly if the Nation is to fulfill its obligation to the millions of American citizens who depend for their income upon the success of our great railroad empire."

Midwest Safety Conference To Be Held at Chicago

The seventeenth annual Midwest Safety Conference will be held at Chicago on May 9 to 11. A regional safety meeting of the Safety Section of the Association of American Railroads will constitute a part of the program on May 10. At the morning session the subjects to be considered are: Employer Financial Responsibility for Accidents to Employees, by W. T. Faricy, general solicitor of the Chicago & North Western; Safety and Service, Convenience and Necessity, by Leslie J. Sorenson, traffic engineer of the City of Chicago; The Mechanical Department's Responsibility in Accident Prevention, by C. M. House, superintendent of motive power and equipment of the Alton; and Safety Promotional Work in Railroad Maintenance of Way and Structures, by G. M. O'Rourke, district engineer of the Northern Lines of the Illinois Central.

In the afternoon, the subjects to be presented include: Safety's Challenge to America, by D. D. Fennell, president of the National Safety Council; Safety's Contribution—Economically and Socially, by Warren E. Fuller, assistant to vice-president, traffic department, of the Chicago, Burlington & Quincy; Men and Methods, by L. G. Bentley, general safety agent of the Chesapeake & Ohio; and Safety in the Car Department, by W. H. Emerson, general master car builder of the Elgin, Joliet & Eastern.

Wheeler to Agree to a Temporary Chandler Bill

Senator Wheeler, Democrat of Montana and chairman of the Senate interstate commerce committee, has made it known that he will not actively oppose the enactment of the Chandler voluntary rail reorganization bill by the Senate if its life is limited to one year. Hearings on the Chandler bill, which passed the House by a unanimous vote, and S. 1869, Senator Wheeler's bill amending the present railroad reorganization law which were scheduled to begin on April 24 were postponed until later in the week. Indications are that the Senate will pass the Chandler bill in due course.

It has also been learned that Senator Wagner, Democrat of New York and chairman of the Senate committee on banking and currency, is considering a bill to provide for government loans to railroads. Details of such a proposal are lacking, but it is known that the Senator has been giving the matter considerable thought.

The Senate committee on interstate commerce has approved with minor amendments S. 2017, a bill making certain amendments to the Railroad Unemployment Insurance Act.

The Senate has adopted S. Resolution 105, providing an additional $10,000 for the use of the committee on interstate commerce in the completion of its report in connection with its railroad holding company investigation.

A G. O. P. Knock at the R. F. C.

John G. Alexander, Republican Congressman from Minnesota, has inserted in the Appendix of the Congressional Record for April 19 two letters from his constituents opposing a plan of reorganization for the Minneapolis & St. Louis proposed by the Reconstruction Finance Corporation which, according to the writers of the letters, would allocate $1,503,000 in new bonds to attorneys and receivers of the road for their remuneration. One letter from the International Association of Machinists, Lodge No. 477, at Robbinsdale, Minn., asserts that the placing of such a bond load on the new corporation to start with will make it "difficult to give labor fair treatment."

After inserting another letter from the Railroad Brotherhoods' Legislative Board for the State of Minnesota which criticizes the proposal of the R. F. C., Mr. Alexander goes on to say that "In view of the apparent misconceptions on the part of the R. F. C. officials of their duty and purpose, and in view of the fact that this same question has previously been before the Interstate Commerce Commission and rejected after full and extensive hearings and investigation, I suggest it is about time for Congress to institute an investigation of the R. F. C. to determine whether there is not malfeasance in the conduct of their duties and to definitely establish proper limitations beyond which they shall not be permitted to go in encroachment on our legislative prerogatives."

Congressman Alexander was referring to the refusal of the I. C. C. to permit several large mid-western carriers to split up the M. & St. L., each road taking certain parts of it and abandoning certain parts.

Baldwin Head Discusses Motive Power in Yale Scientific Magazine

Baldwin Locomotive President Charles E. Brinley, is the author of an article on railroad motive power appearing in the current "Yale Scientific Magazine". Meeting the oft-repeated criticism that the railroads are not progressive, the writer presents various operating criteria which indicate the basic improvement in railroad speeds and efficiency. In this connection Mr. Brinley notes such refinements in motive power as the application of roller bearings to axles, the use of heat treated and alloy steels and studies in the reduction of dynamic augment.

Discussing the relative advantage of prime movers in the industry, the Baldwin president expresses the opinion that Diesel-electric is now justly pre-eminent in the switching field and has proved its efficiency to some extent in high-speed passenger service. He believes, however, that something must yet be done in making the Diesel-powered unit more flexible in load capacity and lower in cost.

As for steam locomotives he writes: "It is not unlikely that an important step forward may be found in the use of poppet valves and higher steam pressures and superheat, permitting early cutoffs with a consequent reduction in fuel and water consumption as compared with the best practice of today, And it is entirely possible that small steam units may be developed, which will successfully handle light-weight streamlined trains of a few cars, showing at the same time a marked reduction in first cost and interest charges. A Diesel-electric power plant is not by any means an essential feature of a light train."

Freight Car Loading

Revenue freight car loadings for the week ended April 22 totaled 558,706 cars, the Association of American Railroads announced on April 27. This was an increase of 10,890 cars, or two per cent, above the preceding week, an increase of 34,958 cars, or 6.7 per cent, above the corresponding week in 1938, and a decrease

of 197,542 cars, or 26.1 per cent, below the comparable 1937 week.

As reported in last week's issue, the loadings for the previous week ended April 15 totaled 547,816 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For Week Ended Saturday, April 15

Districts	1939	1938	1937
Eastern	130,621	118,132	173,046
Allegheny	102,822	101,105	159,059
Pocahontas	13,458	34,419	48,438
Southern	89,753	88,275	109,487
Northwestern	70,343	63,214	99,304
Central Western	96,560	88,568	103,406
Southwestern	44,259	43,872	53,783
Total Western Districts	211,162	195,654	256,493
Total All Roads	547,816	537,585	746,523
Commodities			
Grain and Grain Products	30,932	31,215	29,113
Live Stock	12,483	11,251	13,056
Coal	55,049	88,014	119,535
Coke	5,839	4,121	10,565
Forest Products	28,024	25,422	36,269
Ore	11,259	7,813	35,934
Merchandise l.c.l.	154,129	150,722	173,349
Miscellaneous	250,101	219,027	328,702
April 15	547,816	537,585	746,523
April 8	535,470	522,049	711,079
April 1	604,241	523,489	721,229
March 25	605,462	572,952	756,416
March 18	594,568	540,365	754,922
Cumulative Total, 15 Weeks	8,677,791	8,218,315	10,642,903

In Canada.—Carloadings for the week ended April 15 totaled 41,726, as compared with 38,995 for the previous week and 40,433 for the corresponding week last year, according to the summary of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
April 15, 1939	41,726	21,169
April 8, 1939	38,995	22,589
April 1, 1939	44,692	23,119
April 16, 1938	40,433	21,029
Cumulative Totals for Canada:		
April 15, 1939	610,242	340,235
April 16, 1938	665,432	329,465
April 17, 1937	704,854	424,314

Southern Pacific Inaugurates Another Economy Train

The Coaster, which the Southern Pacific operates between Los Angeles, Cal. and San Francisco, with a consist of standard sleeping cars, tourist sleeping cars and coaches, will be converted into an economy train on May 7, carrying coaches and tourist sleeping cars with a dining car serving economy dinners at 35 cents and breakfasts at 25 cents. The train will carry the tourist sleeping cars of the Sunset Limited, a New Orleans, La.-San Francisco train, between Los Angeles and San Francisco, while the Sunset Limited will carry only sleeping cars between these points.

At the same time, the schedule of the Coaster will be shortened 55 min. northbound and 45 min. southbound. It will leave Los Angeles at 7 p. m. instead of 6:05 p. m. and will arrive in San Francisco at 7:50 a. m. as at present. Returning it will leave San Francisco at 7 p. m. instead of 6:15 p. m. and will arrive in Los Angeles at 8 a. m. as at present.

The first step taken by the Southern Pacific in establishing economy trains occurred on January 3, 1936, when a new train, the Californian, was placed in operation over the Chicago, Rock Island & Pacific and the Southern Pacific between Chicago and Los Angeles, with the latest type of air-conditioned reclining chair cars and tourist sleeping cars. On the same date, the Golden State Limited operating over these roads became an all-Pullman train. The Californian featured economy dining car meals along with off-the-tray food service and free pillows for passengers.

March Truck Loadings Increase Far Surpasses R. R. Traffic Rise

The movement of freight by motor truck in March was 20.5 per cent above the February volume and 23.4 per cent ahead of March, 1938's, tonnage, according to reports compiled by American Trucking Associations. [The increase in *railroad* carloadings for the four weeks reported on in March averaged only 8 per cent, or about one-third as much as the increase in truck loadings.] The A. T. A. truck loadings index figure, based on the 1936 monthly average as 100, stood at 118.98 in March as compared with 101.9 for February and 83.11 for March, 1938.

Comparable reports were received from 210 motor carriers in 38 states, transporting an aggregate of 896,324 tons. These same carriers handled a total of 743,935 tons in February and 726,331 tons in March, 1938. The rise over February was attributed in part to the fact there were 27 working days in March as against 23 in February.

The greatest increase was shown in the transportation of automobiles which was 29.1 per cent over February and 91.9 per cent over March a year ago. This freight made up 6.2 per cent of the total reported. General merchandise, which constituted the bulk of truck tonnage, or 75.1 per cent of that reported, increased 21.6 per cent over February, and 21.2 per cent over March of last year. Of the total tonnage, general merchandise constituted 672,956 tons, compared with 553,340 tons in February and 556,286 tons in March, 1938. Iron and steel, comprising 2.4 per cent of the total, rose 44.6 per cent over March of last year but declined .75 per cent under February, 1939. Petroleum products, accounting for 13.2 per cent of the total, showed an increase of 13.9 per cent over February and 19.5 per cent over March, 1938. Household goods and miscellaneous commodities, which represented three per cent of the total, increased 27.6 per cent over February and 1.7 per cent over March, last year.

President Reshuffles Many Government Agencies

President Roosevelt, acting under authority given him in the recently-enacted governmental reorganization bill, has submitted to the Congress executive orders which would place the Reconstruction Finance Corporation in a new lending agency together with the Electric Home and Farm Authority, the Federal Home Loan Bank Board, the Federal Housing Administration and their associated agencies and boards, and the Export-Import Bank of Washington. These agencies will continue to operate as separate agencies, but a Federal Loan Administrator will be appointed at a salary of $12,000 per year whose duty it will be to coordinate all their activities. The new agency will be known as the Federal Loan Agency. It is not known at this time who will head the new body, but in some quarters it is thought that the job will be offered to Jesse Jones, chairman of the R. F. C.

The executive order also provides for the transfer of the Bureau of Public Roads from the Department of Agriculture to a new agency to be known as the Federal Works Agency, which will include such bodies as the Public Works Administration, the Works Progress Administration, the Public Buildings Branch of the Procurement Division in the Treasury Department, the United States Housing Authority, and the Branch of Buildings Management of the National Park Service in the Interior Department. This agency will also have an administrator at a salary of $12,000 per year.

The Committee-of-six bill in the House, H. R. 4862, would transfer the Bureau of Public Roads from the Agriculture Department to the proposed transportation board.

The orders become effective unless disapproved by Congress within 60 days of submission.

Estimated Weights on Citrus Fruits

Examiner Paul O. Carter has recommended in a proposed report that the Interstate Commerce Commission find that the railroads have failed to justify suspended schedules carrying a proposed revision of estimated weights on citrus fruits from California, Arizona, Texas and Florida to destinations in the United States. This recommended finding in I. & S. Docket No. 4511, Estimated Weights on Citrus Fruits, would be without prejudice to the establishment of estimated weights on a basis found by the examiner to be reasonable, "subject to the condition that the resulting charges are reasonable, and in other respects, lawful."

"The commission," says the proposed report, "should find that respondents have not proved the reasonableness of the transportation charges which would result from establishment of the proposed estimated weights. Although the establishment of estimated weights on citrus fruits approximating the averages of actual weights, based on adequate and representative test weights, is reasonable, and although respondents' test weights, with the exceptions hereinbefore noted, are adequate and representative, the commission should not permit the establishment of the proposed estimated weights in the absence of proof that the resulting charges will not be unreasonable or otherwise unlawful. Proof of the reasonableness of the resulting charges has not been made."

The proposed revision of the estimated weights, the report reveals, came about as a result of admonishments which the railroads have received "during recent years" to revise their published estimated weights on fruits and vegetables so that they would more nearly reflect the actual weights of the loaded containers. "This admonition," the examiner goes on, "resulted in the appointment, under the supervision of the Association of American Railroads, of com-

mittees in the principal rate territories to undertake and complete weight tests of fruits and vegetables. In the 1935-36 season respondents began the test weighing of citrus fruits on a comprehensive scale. The revised estimated weights under suspension were published as a result of the studies made."

Alldredge and Lee Are In

The Senate on Monday unanimously confirmed President Roosevelt's nominations of J. Haden Alldredge and William E. Lee for Interstate Commerce Commission terms expiring respectively on December 31, 1944, and December 31, 1945. The latter is a reappointment, while Mr. Alldredge succeeds Commissioner Frank McManamy whose term expired on December 31, 1937, but who has since continued to serve under that provision of the Interstate Commerce Act which leaves an incumbent in office until his successor qualifies.

The Alldredge and Lee nominations went through the Senate's confirmation machinery in rapid fashion after President Roosevelt had withdrawn the name of Thomas R. Amlie, whose nomination to succeed Commissioner B. H. Meyer was before the same sub-committee of the Senate committee on interstate commerce. With the Amlie affair thus off its hands that subcommittee, headed by Senator Johnson, Democrat of Colorado, proceeded to report the Alldredge and Lee nominations favorably to the full committee. The latter made its favorable report to the Senate on March 20 and the unanimous confirmations came on the first day thereafter that the upper branch was in session—April 24.

Mr. Alldredge, a former chief of the Alabama Public Service Commission's Transportation Bureau, has recently been director of the Tennessee Valley Authority's Commerce Department. A sketch of his career appeared in the *Railway Age* of February 18, page 315, where the career of his predecessor, Commissioner McManamy, was also reviewed.

The staffs of the commission's bureaus of locomotive inspection, service, and safety gave a farewell dinner to Commissioner McManamy on April 25 at the Columbia Country Club in Washington, D. C. About 140 members of the commission's staff and members of the country club who had been intimately associated with the commissioner attended the dinner. Also among those present were M. J. Gormley executive assistant of the Association of American Railroads, Luther Walter, co-trustee of the Chicago Great Western, Commissioner Rogers and Secretary Bartel.

Members of the staff of the three bureaus presented Mr. McManamy with a motor boat, a swimming suit and a fishing outfit, while Mrs. McManamy received an electric clock. Members of the country club gave the commissioner a golf outfit as a token of their respect for him. It is understood that Mr. McManamy will retire to a home which he has purchased in Daytona Beach, Fla.

Meanwhile, the members of the commission, their wives and daughters and former commissioners honored Commissioners McManamy and Meyer at a dinner held at the Shoreham Hotel on April 26. As this issue went to press, President Roosevelt had not sent to the Senate another nominee to succeed Commissioner Meyer, although it is known that the latter has requested the President to relieve him of his duties by May 1. In addition to those recommended by the Railway Labor Executives' Association, as listed in last week's issue, former Governor Philip LaFollette of Wisconsin has been mentioned for the position.

Bureau of Public Roads Frowns on Super Highways

The Bureau of Public Roads, in a comprehensive 212 page report on highway development to meet increased traffic flow, has reported to the Congress that toll highways cannot be relied upon as a sound solution of providing adequate highway facilities or to solve any considerable part of the problem.

As a result of its detailed study which was authorized by the Federal Aid Highway Act of 1938, the Bureau, basing its estimates on three East-West and three North-South express highways costing on the average of $184,050,000 annually, reached the conclusion that a direct toll system would not be feasible as a means of recovering the entire cost of the facilities. The report went on to point out that the maximum amount of traffic which reasonably could be expected to utilize the highways would yield $72,140,000 per year from 1945 to 1960, assuming an average rate of toll of 1.5 cents per vehicle-mile for all vehicles.

If the Congress desires to authorize an actual test, the Bureau report said, it is recommended that construction be undertaken over a route where there is "a reasonable prospect" for recovering the costs. Such a route could be found between Washington, D. C. and Boston, Mass., and the Bureau also cited one other road where it said that the annual toll collections for the year 1960 would slightly exceed the annual cost. This was the 172-mile segment between Philadelphia, Pa., and New Haven, Conn., where it is estimated that the revenue in 1960 would represent a combined average of 106 per cent of the estimated cost for that year.

The Bureau told the Congress that it realized that its report should be constructive rather than negative and proceeded to outline a "master highway plan" calling for:

(1) The construction of special, direct inter-regional highways with necessary connections through and around cities and designed to meet requirements of national defense and increasing peacetime traffic of longer range.

(2) Modernization of the Federal-aid highway system.

(3) Elimination of hazards at railroad grade crossings.

(4) An improvement of secondary and feeder roads, properly integrated with land-use programs.

The report also recommended for heavy traffic the divided four-lane highway and expressed the view that three-lane roads might well lead to an abnormally high accident rate. The Bureau told the Congress that it had undertaken a detailed study covering the location of toll stations, lighting, signs, landscape development, protection fencing, and the problem involved in seeking rights-of-way.

"The demonstrated improbability of a return from tolls sufficient to recover the costs of constructing and operating six transcontinental highways, such as were described in the Federal Aid Highway Act of 1938, results from the consequences of direct toll impositions", the report asserted. "It does not follow that there is not a sufficient traffic to warrant and require facilities of a higher standard than are provided at present. On the contrary, the studies show the potential use of such facilities in many sections is more than sufficient to justify their provision."

Parliament Body Queries C. N. R.

Important developments with regard to agreed charges may be expected shortly, S. J. Hungerford, president of the Canadian National told the House Railway Committee at Ottawa last week. The C. N. R. officials have been working on these for some months, and substantial progress has been made but nothing has so far been consummated, he added. [Since Mr. Hungerford made this statement, the first "agreement" has been announced, as noted elsewhere in these pages.]

The House Railway Committee covered a wide range in considering the C. N. R. annual report. The Montreal terminal, the Vancouver Hotel, the sale of one of the C. N. Steamship vessels, provision of work in railway shops and the various C. N. R. pension plans all came under examination.

S. W. Fairweather, chief of the road's research bureau, explained the circumstances under which the C. N. R. and the Canadian Pacific will jointly operate the new hotel in Vancouver. Under the agreement the C. P. R. will abandon its old hotel and attempt to sell the building which must not, however, be used again for hotel purposes.

If it is sold, the C. N. R. will participate in the proceeds of the sale, meanwhile sharing also in the cost of keeping the building in good condition. At the end of three years the old hotel will be demolished if it has not been sold or leased.

The first charge against the new hotel will be $280,000 interest on advances by the Government. After all operating expenses have been paid, both railways will divide the net revenues.

Whenever it is advantageous, railway equipment is constructed in the company's own shops, Mr. Hungerford told Dr. J. P. Howden (Lib., Manitoba). The latter had asked about periods of unemployment in the Transcona shops, Winnipeg, suggesting that more work be provided. The railway shops were not equipped to make every type of equipment, notwithstanding what might be said by the employees, Mr. Hungerford added.

The executive payroll of the Canadian National Railways was slashed by 44 per cent between 1930 and 1938 while payroll for all other employees was cut 26½ per cent, the committee was told by W. M. Armstrong, assistant director in the C. N. R. bureau of economics.

The payroll for executive officers and staff assistants was $5,414,000 in 1930, $2,-

927,000 in 1935 and $3,042,000 in 1938, he said. Average compensation for executive employees was reduced nine per cent, while average compensation for other employees was reduced 1.1 per cent.

Considerable debate arose on a proposal to recommend to the government that steps be studied for the redemption of the $216,207,000 perpetual bonds of the old Grand Trunk outstanding. Mr. Vien (Lib., Montreal) agreed with a suggestion by W. A. Walsh, that holders of perpetual bonds should be advised they would be redeemed or replaced within five or 10 years. One member called this move "the first direct action by a committee of Parliament towards repudiation." He pictured the possible effect on the national credit, but Mr. Vien doubted that the financial world would be shocked by changing perpetual bonds issued so long ago. The financial world would more likely consider it "not a breach of faith but a redress of an unbearable situation."

Fuel Shortage Waxes Serious

(*Continued from page 746*)

mid-west via the Great Lakes at Lake Erie ports.

The so-called "hard-coal" roads which ordinarily burn a varying mixture of small sizes of anthracite with bituminous are generally increasing the proportion of the former to conserve soft coal supplies. The Reading and Central of New Jersey are now using 100 per cent of No. 1 buck or chestnut anthracite on terminal and light, handfired locomotives, while a mixture of about 85 per cent of chestnut to 15 per cent of bituminous is being burned in stoker-fired motive power. The Delaware, Lackawanna & Western is also increasing the proportion of small sizes of anthracite ordinarily mixed with its bituminous fuel.

The Erie, which ordinarily burns straight bituminous fuel, has been using run-of-the-mine anthracite on its lines east of Buffalo, N. Y., and has found that grates take the fuel without difficulty. Because of reduced traffic the road has closed its Hornell, N. Y., and Susquehanna shops.

The agreement between anthracite miners and operators expires April 30 and it is the opinion of many observers that renewal of the contract may run into difficulties. Mr. Lewis has also indicated that he would call out on strike some 100,000 miners in the mid-western coal fields May 15 by a short-notice cancellation of contract which would tie up virtually the entire coal supply of the country.

House and Senate Subcommittees Considering Transport Bills

Subcommittees of the House committee on interstate and foreign commerce and of the Senate committee on interstate commerce have for the past week or so been at work in executive sessions on proposals for general transportation legislation upon which public hearings were recently completed. On the House side the subcommittee has before it H. R. 2531, the omnibus bill introduced by Chairman Lea, and the so-called committee-of-six bill, H. R. 4862, also introduced by Mr. Lea; the Senate subcommittee is considering S. 2009, the "key bill" of the transportation legislation being proposed by Chairman Wheeler of the committee on interstate commerce and Senator Truman, Democrat of Missouri.

Meanwhile Carl R. Gray, vice-chairman of the Union Pacific and George M. Harrison, chairman of the Railway Labor Executives' Association, were at the White House on April 24 for a discussion of the legislative situation with President Roosevelt. Upon leaving this conference the two committee-of-six members said they were confident that broad-gage legislation would be enacted at the present session. It was understood as this issue went to press that the Senate subcommittee was endeavoring to complete its work on S. 2009 by the end of the week, although the measure as thus revised was not expected to be in shape for reporting to the full committee until next week. On the House side Chairman Lea indicated during the public hearings that he hoped to have the committee frame a bill to be reported in the House by May 1.

Members of the Senate subcommittee working on S. 2009 are: Chairman Wheeler and Senators Truman of Missouri and Minton of Indiana (Democrats) and Reed of Kansas and Gurney of South Dakota (Republicans). The membership of the House subcommittee of seven, headed by Chairman Lea, was given in the *Railway Age* of April 15, page 674.

In addition to the above-mentioned H. R. 2531 and H. R. 4862 the House subcommittee has before it a print of a "bill" prepared for its information for the purpose of presenting in tentative form the recommendations (except those relating to water carriers) of the Interstate Commerce Commission as set forth in the 80-page letter which Chairman Lea received on March 20 from Commissioner Eastman, chairman of the commission's legislative committee. Mr. Eastman's summary of the I. C. C. conclusions was published in the *Railway Age* of March 25, page 522. The "bill" putting these I. C. C. recommendations into legislative language is a four-title document with Title I carrying, among others provisions for compulsory pooling; elimination of the consolidation plan; authority for the commission to delegate its work without restriction to individual commissioners, to create one or more appelate divisions and to establish rules limiting review by the full commission to cases of general transportation importance.

Title II is reserved for water carrier regulatory provisions, "not yet prepared;" while Title III would create a planning and promotional type of Federal Transportation Authority of the variety recommended in the report of the President's first railroad committee—the so-called Splawn-Eastman-Mahaffie committee. The Authority would consist of three members appointed by the President, and it would have a two-year life with Presidential power to extend such life an additional three years. Title IV embodies recommendations of the Splawn-Eastman-Mahaffie committee that $300,000,000 in R. F. C. loans be made available for the purchase of rolling stock and shop equipment, and that land-grant rates be repealed.

Senator Wheeler last week received a letter from Ted V. Rodgers, president of American Trucking Associations, Inc., setting forth conclusions of the A. T. A. legislative committee which, as the A. T. A. organ, "Transport Topics," put it turned "thumbs down on S. 2009." "The basic objection," Mr. Rodgers wrote, "rests on the proposition that the proposed legislation fails to recognize the inherent differences in the various transportation agencies and proceeds to subject all of them to identical and impractical provisions . . ." In closing Mr. Rodgers said: "We sincerely urge you to continue the established form of regulating each type of transportation by appropriate parts of the Interstate Commerce Act, such as Part I for railroads, Part II for motor carriers, etc., and to enact such additional legislation as may be deemed necessary, by reference to the existing form and style of the Interstate Commerce Act which recognizes the inherent characteristics of each transportation agency."

Meanwhile on April 24 Representative Martin of Massachusetts, Republican leader of the House of Representatives, called for "immediate legislation to rehabilitate the railroads to make secure the jobs of many hundreds of thousands of workers and the investments of savings banks and life-insurance companies." The foregoing was on Mr. Martin's list of 12 steps "necessary to promote business revival and re-employment."

Construction

DELAWARE & HUDSON.—A low bid of $31,763 submitted by the Spellman Oliver Company, Chateaugay, N. Y., covering the reconstruction of the structure carrying the Douglass crossing over this road and the elimination of the Rockland crossing of the same railroad in the Town of Chesterfield, N. Y., has been approved by the New York Public Service Commission. The commission has directed the railroad to award the contract and begin the work as soon as practicable.

CHICAGO, ROCK ISLAND & GULF and FORT WORTH & DENVER CITY.—Two contracts have been awarded by the State Highway Department of Texas in connection with three grade separation structures beneath the tracks of these railroads on Pine street and on Denrock avenue in Dalhart, Tex. A contract amounting to $278,484 was awarded R. R. Tway, Oklahoma City, Okla., for the construction of the three structures and a contract amounting to $31,171 was awarded to Gifford-Hill Company, Inc., Dallas, Tex., for the installation of 4895 lin. ft. of 42-in. reinforced concrete pipe for drainage of the three subway grade separations. On Denrock avenue two structures will be built, one under a wye track of the Chicago, Rock Island & Gulf, and the other under the crossing of the main track of that road with the Fort Worth & Denver City. The former structure will be 132 ft. long and

will consist of four WF-Beam spans with a wrought iron floor and ballast deck on reinforced concrete piers and abutments. The concrete piers rest on a rock foundation and the abutments are supported on concrete piling. The bridge under the crossing will consist of two 35 ft. 6 in. wide-flange I-beam spans on a reinforced concrete pier and abutments, resting on a rock foundation. This bridge will also have a ballast deck with a wrought iron floor.

The structure on Pine street, which is under the main track of the Rock Island, will be the same length and of the same type as the bridge under the wye track.

All three structures will provide two vehicular lanes each 24 ft. wide and a vertical clearance of 14 feet.

MISSOURI PACIFIC.—Contracts totalling $260,046 have been awarded the Stiers Brothers Construction Company, St. Louis, Mo., for the construction of the Chippewa Street subway under the Missouri Pacific tracks and the retaining walls attached thereto in that city. The new railway structure consists of one slightly skewed I-beam span for all three tracks, on reinforced concrete abutments with a concrete floor and ballast deck extending over the new depressed roadway (Chippewa street) 44 ft. wide. The abutments are supported on concrete piles. In addition to the railroad bridge, the grade separation project involves extensive retaining walls and a 20-ft. roadway at natural ground level on each side of the depressed street. These roadways are joined by a highway bridge on each side of the railway structure. The structures also provide a protected pedestrian walk.

MISSOURI PACIFIC.—A contract amounting to $723,779 has been awarded the Missouri Valley Bridge & Iron Company, Leavenworth, Kan., for the extension of the Atchafalaya River bridge at Krotz Springs, La. The present bridge consists, from east to west, of 362 ft. of pile trestle approach, one 300-ft. through truss span, one 300-ft. draw span, two 300-ft. through truss spans and 598 ft. of pile trestle approach. The bridge is being extended on the west end to enlarge the channel of the river, as a part of the $300,000,000 Mississippi River Flood Control project. The new work consists of the removal of two piers under the two truss spans west of the draw span, the construction of two deep foundation piers sunk by open dredging process to a depth of 140 ft. below mean gulf level, the construction of 444 ft. of new fixed span and two cantilever arms 439 ft. long, the construction of a new bank pier on creosoted foundation piles and 240 ft. of pile trestle approach on the west end. The two 300-ft. through truss spans on the west end of the old bridge will be used in the cantilever arms of the new structure. The lengthened bridge will have a total length when completed of approximately 2,506 ft. Subcontractors on this work are the Mount Vernon Bridge Company, Mount Vernon, Ohio, who will furnish the structural steel and Doullut & Ewin, Inc., New Orleans, La., who have constructed the temporary trestle and approaches for routing railway traffic around the work.

Equipment and Supplies

LOCOMOTIVES

THE KANSAS CITY SOUTHERN has ordered two 2,000 hp. Diesel-electric locomotives from the Electro-Motive Corporation.

FREIGHT CARS

THE GREAT NORTHERN has ordered 1,000 box cars, 40 ft. long, 50 tons' capacity, from the Pullman-Standard Car Manufacturing Company.

PASSENGER CARS

ROYAL STATE RAILWAYS OF SIAM.—Sealed tenders for the supply of electric cars and trailers will be received by the superintendent of stores, Royal State Railways of Siam, Bangkok, Siam, until 14 o'clock, July 28. Tender forms and information may be obtained from Messrs. Sandberg, 25 Broadway, New York.

IRON AND STEEL

STATEN ISLAND RAPID TRANSIT (BALTIMORE & OHIO SUBSIDIARY).—A contract for 660 tons of steel, to be used on the grade crossing elimination project between Great Kills and Hugenot, Staten Island, N. Y., has been let to the Bethlehem Steel Company.

THE ATCHISON TOPEKA & SANTA FE has released orders for 22,000 tons of the 50,000 tons of rails which it plans to lay in 1939, as reported in the *Railway Age* of April 22. The 22,000 tons are being rolled by the Carnegie Illinois Steel Corporation and the Colorado Fuel & Iron Company.

PENNSYLVANIA - READING SEASHORE LINES.—Sealed bids for 182 gross tons of 131-lb. R. E. rail for grade crossing elimination work at Absecon, N. J., will be received until 2:00 p. m. (e.s.t.) May 11, at the office of E. J. Lamneck, purchasing agent, room 415, 15 North 32nd street, Philadelphia, Pa. Separate bids will also be received for cross ties.

SIGNALING

UNION PACIFIC.—Sealed proposals will be received at the office of E. L. Fries, general purchasing agent of this road, Omaha, Nebr., until 12 o'clock noon, (c.s.t.) May 11, for furnishing the necessary materials for five or more railroad grade crossing protective devices, to be installed under the federal grade crossing program in the State of Utah.

UTAH IDAHO CENTRAL.—Sealed bids will be received by this road, 417 Kiesel building, Ogden, Utah, until 10:00 a. m., May 13, on all materials necessary for installation of 11 electric flashing light crossing signals, to be installed in the State of Utah under the federal grade crossing project. E. C. Singleton, is purchasing agent at the above address.

WHEELING & LAKE ERIE.—Sealed bids will be received by this road at 12 o'clock noon, May 15, for necessary material for installation of electric alternate flashing light signals, to be installed near Oberlin, Ohio, under federal grade crossing project No. FAGH 293 (3) of the State of Ohio. W. W. Griswold, is purchasing agent of this road at Cleveland, Ohio.

Supply Trade

Joseph T. Ryerson & Son, Inc., Chicago, has reconstructed its plant at Cambridge, Mass., to increase the ground area occupied more than 30 per cent, and storage facilities to a greater extent.

W. Purdue, consulting engineer of the **Ramapo Ajax** division of the **American Brake Shoe & Foundry Company,** Chicago, will retire on May 1, but will continue in an advisory capacity.

George W. Sines, mechanical engineer of the Western-Austin Company, Aurora, Ill., has resigned to become affiliated with the Symington-Gould Corporation, Rochester, N. Y.

The Dravo Corporation, Pittsburgh, Pa., will handle in western Pennsylvania territory for the **Korfund Company, Inc.,** Long Island City, N. Y., the sales, service and installation of Korfund anti-vibration products.

A. D. Sheere, assistant division manager at Atlanta, Ga., of the **A. M. Byers Company,** Pittsburgh, Pa., has been appointed manager of the Houston, Texas, division office. **W. B. Simpson,** sales representative in the Pittsburgh division's northern territory, has been appointed assistant division manager, Atlanta, to succeed Mr. Sheere.

Marvin W. Smith, manager of engineering of the **Westinghouse Electric & Manufacturing Company,** has been elected a vice-president of the company with headquarters at Pittsburgh, Pa. Mr. Smith, who will direct all the company's engineering activities, has been associated with Westinghouse since the day he left college in 1915.

Quinn R. Barton, Inc., 1305 West Forsyth street, Jacksonville, Fla., has been appointed representative of the **Bucyrus-Erie Company,** South Milwaukee, Wis. The **Fuchs Machinery & Supply Company,** 1102 Farnam street, Omaha, Neb., and the **Great Lakes Supply Corporation,** 324 West 36th street, Chicago, have been appointed distributors in their respective territories for the Bucyrus-Erie Company.

John R. Read, vice-president in charge of manufacturing patents, engineering and plants, of the **Canadian Westinghouse Company,** Hamilton, Ontario, was elected president of the company, at a recent meet-

Continued on next left-hand page

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LIMA LOCOMOTIVE WORKS INCORPORATED

LIMA LOCOMOTIVE WORKS, INCORPORATED, LIMA, OHIO

ing of the board; **N. S. Braden,** formerly vice-president of the Canadian Westinghouse Company, became vice-chairman of the board, and **Paul J. Myler,** who had been chairman and president of the company continues as chairman.

Henry Jude, assistant general sales manager of the locomotive equipment division of **Manning, Maxwell & Moore, Inc.,** Bridgeport, Conn., has been appointed general sales manager of the same division, to succeed C. H. Butterfield, who was recently appointed vice-president in charge of the locomotive and industrial divisions. Mr. Jude began work with this company in 1905, as an office boy, serving in various capacities until 1934, when he became assistant general sales manager of the locomotive equipment division.

Effective April 1, **The Benwood Linze Company,** St. Louis, Mo., became the domestic and export sales agents for **The B-L Electric Manufacturing Company** of St. Louis. There will be no changes in officers, personnel, or corporate structure. Coincident with the arrangement by which The Benwood Linze Company will handle the sales of B-L Electrical Products, this company has acquired the interests of the Brenkert Light Projection Company in the manufacture of rectifier equipment.

Announcement that the **United States Steel Corporation** of Delaware will open an executive office in Chicago was made by Benjamin F. Fairless, president, at a luncheon at the Blackstone Hotel on April 26. **G. Cook Kimball,** executive vice-president of the Carnegie-Illinois Steel Corporation, has been elected executive vice-president of the United States Steel Corporation at Chicago. The opening of the new Chicago office is in recognition of the importance of the Chicago area in the nation's steel industry. Mr. Kimball will have charge of all operating subsidiaries of United States Steel in this area. At the luncheon, attended by several hundred civic and business leaders and the

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G. Cook Kimball

officers and directors of the corporation, the speakers included Mr. Fairless and Mr. Kimball, Oscar G. Mayer, director and general manager of Oscar Mayer and Company; E. M. Voorhees, chairman of the Finance Committee of the corporation; and E. R. Stettinius, Jr., chairman of the board of the corporation. Mr. Kimball graduated from Harvard University in 1900, and in the following year entered the steel industry in the engineering department of the American Tin Plate Company at Pittsburgh, Pa. In 1905, he was appointed chief engineer of the American Sheet and Tin Plate Company and held that position until 1931 when he was elected a vice-president of that company. In June, 1932, he was elected vice-president of the Illinois Steel Company, with headquarters at Chicago, and when the Carnegie-Illinois Steel Corporation was formed in 1935, he was made executive vice-president in charge of the Chicago district.

Thomas O'Leary, Jr., sales manager of the Western division of the Transportation Department of the **Johns-Manville Sales Corporation,** has been advanced to the position of sales manager of the Western Region of the Transportation Department, having jurisdiction over the Western, Southwestern and Pacific divisions of

Thomas O'Leary, Jr.

that department. He will have his headquarters in Chicago, as heretofore. Mr. O'Leary was born at San Francisco, Cal. He received his early training on the Southern Pacific and in 1911, became associated with the New York Air Brake Company as mechanical representative in San Francisco, and later as sales representative with headquarters at Denver, Colo. He entered the army as second lieutenant, later becoming a captain. On his return after 15 months' service overseas, he again became associated with the New York Air Brake Company. In 1925 he joined the sales force of Johns-Manville as special representative, with headquarters at Salt Lake City, Utah. Mr. O'Leary was promoted to assistant manager of the Western division of the Transportation Department in December, 1927, and to sales manager of the Western division in February, 1935, in which capacity he has served until his appointment as regional sales manager.

C. M. Patten has been appointed sales manager of the Southwestern division of the Transportation Department of the Johns-Manville Sales Corporation, succeeding **A. C. Pickett** who has resigned to accept another position. Mr. Patten's headquarters will be at St. Louis, Mo., as formerly. He was born at Delavan, Ill., and was connected with the Missouri Pacific from 1909 until 1917, when he entered

C. M. Patten

the service of Johns-Manville as sales representative, with headquarters at St. Louis and later at Omaha, Neb. He returned to St. Louis in October, 1936, as assistant sales manager of the Southwestern division, serving in this capacity until his recent appointment.

OBITUARY

Charles Neher, district sales manager of Templeton, Kenly & Co., Chicago, with headquarters at Dallas, Tex., died in that city on April 5.

George D. Kirkham, who retired as southern district manager of the American Steel Wire Company, with headquarters at Memphis, Tenn., in 1929, died in Savannah, Ga., on April 22, following an operation.

Charles B. Coates, electrical engineer of the Chicago Pneumatic Tool Company, Cleveland, Ohio, died on March 17, at the age of 69 years. He was born at Erie, Pa., and was a graduate of Cornell University. Mr. Coates was closely associated in the development and invention of portable electric tools. He entered the service of the Chicago Pneumatic Tool Company in 1908, as manager of electric tool sales and later served in its engineering department.

TRADE PUBLICATION

STEEL ROOFING PRODUCTS—A 32-page, two-color booklet entitled "Republic Steel Roofing Products" has been issued by the Republic Steel Corporation, Cleveland, Ohio. This catalog, with detailed descriptions and illustrations, presents the various types of steel roofing and roofing specialties manufactured by this company, together with tables of weights and freight per square, rolling limits, allowances for laps on corrugated sheets, extras on galvanized or painted roofing and siding, bundling tables for galvanized flat sheets and an estimating table for roofing products. Two other products, Republic Galvannealed Sheets and Enduro Stainless Steel Sheets, are also described.

Financial

ANN ARBOR.—*Annual Report.*—The 1938 annual report of this company shows net deficit, after interest and other charges, of $324,403, an increase of $173,261 over net deficit in 1937. Selected items from the income statement follow:

	1938	Increase or Decrease Compared with 1937
Average Mileage Operated	293.86	.....
RAILWAY OPERATING REVENUES	$3,468,358	−$452,035
Maintenance of way	318,442	−16,485
Maintenance of equipment	764,603	−146,100
Transportation—Rail	1,567,169	−137,682
TOTAL OPERATING EXPENSES	2,944,335	−294,604
NET REVENUE FROM OPERATIONS	524,022	−157,430
Railway tax accruals*	244,763	+18,237
Railway operating income	279,258	−175,667
Net rents	161,122	+261
NET RAILWAY OPERATING INCOME	118,136	−175,929
Other income	17,756	−3,783
TOTAL INCOME	135,892	−179,712
Rent for leased roads and equipment	31,422	−1,252
Interest on funded debt	409,900	.....
TOTAL FIXED CHARGES	454,668	−1,977
NET DEFICIT	$324,403	+$173,261

* Federal income tax and surtax on undistributed profits not applicable, due to failure to earn a taxable net income and the fact that domestic corporations in receivership are not subject to surtax on undistributed profits.

BELT RAILWAY OF CHICAGO.—*Annual Report.*—The 1938 annual report of this company shows net income, after interest and other charges, of $53,908, a decrease of $39,845 as compared with net income in 1937. Selected items from the income account follow:

	1938	Increase or Decrease Compared with 1937
RAILWAY OPERATING REVENUES	$4,696,333	−$767,593
Maintenance of way	553,442	+46,989
Maintenance of equipment	346,057	−47,740
Transportation—Rail	2,126,212	−324,456
TOTAL OPERATING EXPENSES	3,230,109	−285,792
Operating ratio	68.78	+4.43
NET REVENUE FROM OPERATIONS	1,466,223	−481,800
Railway tax accruals	486,663	−176,976
Railway operating income	979,559	−304,823
Net Rents	655,001	+301,178
NET RAILWAY OPERATING INCOME	1,634,561	−3,645
Other income	65,089	−11,672
TOTAL INCOME	1,699,651	−15,317
Rent for leased roads	1,631,130	+14,515
TOTAL FIXED CHARGES	1,644,701	+25,716
NET INCOME	$53,908	−$39,845

BOSTON & MAINE.—*Notes.*—Division 4 of the Interstate Commerce Commission has amended its order of March 9, 1934, and supplemental order of March 28, 1934, so as to permit $1,740,000 of four per cent registered serial collateral notes to be amended by eliminating therefrom this company's right of redemption. Division 4 has also modified its order of May 15, 1934, so as to permit $860,000 of four per cent registered serial collateral notes to be amended in the same manner.

CHESAPEAKE & OHIO.—*Directors' Committees Named.*—All members of the board of directors of this road were reelected at the annual meeting held in Richmond, Va., April 18. Stock held by Alleghany Corporation was not voted at the meeting but was represented for purposes of a quorum. R. C. Gifford and J. B. Hollister were named to the executive committee to succeed Robert R. Young, chairman of Alleghany, and H. B. Epminger Jr. Homer L. Ferguson was named to the finance committee in place of Mr. Young, and George D. Brooke, president of the road, was added as a new member.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Equipment Trust Certificates.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to assume liability for $1,920,000 of three per cent equipment trust certificates, maturing in 15 equal annual installments of $128,000 on April 1 in each of the years from 1940 to 1954, inclusive. The issue has been sold at 100.50 and accrued dividends to the Northwestern Mutual Life Insurance Company of Milwaukee, Wis., making the average annual cost to the company approximately 2.92 per cent.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Annual Report.*—The 1938 annual report of this road shows net deficit, after interest and other charges, of $17,996,269, as compared with net deficit of $14,221,271 in 1937. Selected items from the income statement follow:

	1938	Increase or Decrease Compared with 1937
RAILWAY OPERATING REVENUES	$99,436,845	−$8,225,430
TOTAL OPERATING EXPENSES	80,673,186	−6,464,258
NET REVENUE FROM OPERATIONS	18,763,659	−1,761,172
Railway tax accruals	3,018,017	+1,882,068
Railway operating income	10,058,659	−3,704,817
Equipment rents—Dr.	2,317,944	−175,543
Joint facility rents—Dr.	2,466,175	−13,151
NET RAILWAY OPERATING INCOME	5,274,538	−3,516,122
Other income	928,811	−205,828
TOTAL INCOME	6,203,350	−3,721,951
Rent for leased roads	1,112,052	+2,400
Interest on funded debt	12,915,025	+38,832
TOTAL FIXED CHARGES	14,954,451	+52,131
NET DEFICIT	$17,996,269	+$3,774,998

DAYTON UNION.—*Bonds, Capital Stock, and Acquisition.*—This company has asked the Interstate Commerce Commission for authority to issue $3,900,000 of general mortgage bonds, series A, and 10,590 shares of capital stock. The company has also asked authority to acquire slightly over four miles of track in Dayton Ohio, now owned by the Baltimore & Ohio, the New York Central and the Pennsylvania. The financing is to be used to pay for the acquisition of property from the three lines. The New York Central, the B. & O. and the Pennsylvania have also asked authority from the commission to guarantee the payment of the interest and principal of the bonds.

DENVER & RIO GRANDE WESTERN.—*Annual Report.*—The 1938 annual report of this road shows net deficit of $5,660,106, after interest and other charges. This is a decrease of $285,837 as compared with net deficit in 1937. Selected items from the income account follow:

	1938	Increase or Decrease Compared with 1937
Average Mileage Operated	2,566.68	−8.39
RAILWAY OPERATING REVENUES	$23,404,171	−$3,377,820
Maintenance of way	3,179,025	−1,578,695
Maintenance of equipment	5,971,298	−1,814,025
Transportation	8,792,849	−1,336,541
TOTAL OPERATING EXPENSES	19,742,479	−4,383,237
Operating ratio	84.35	−5.73
NET REVENUE FROM OPERATIONS	3,661,691	+1,005,416
Railway tax accruals	2,623,602	+444,015
Hire of equipment—Net Dr.	551,182	+91,116
Joint facility rents—Net Dr.	315,778	+15,819
NET RAILWAY OPERATING INCOME	171,128	+454,465
Other income—Net Dr.	*2,192,582	+160,026
Available for interest—Dr.	2,021,453	+294,439
Interest on funded debt	3,638,652	+8,601
NET DEFICIT	$5,660,106	−$285,837

* Includes $1,652,190 Interest on Underlying Bonds Matured Unpaid.

ERIE.—*Abandonment by the New Jersey & New York.*—Examiner R. Romero of the Interstate Commerce Commission has recommended in a proposed report to the commission that it authorize the New Jersey & New York to abandon the portion of its branch line extending from Nanuet, N. Y., to New City, 4.1 miles.

FLORIDA EAST COAST.—*Receivership Continued.*—With the approval of all parties in interest, Federal Judge L. W. Strum adjourned until October 20 hearings called to consider a plan of reorganization for this road which has been in receivership since September, 1931. At hearings which closed on April 15 no definite plan for immediate reorganization was offered. The adjournment order requested that the bondholders' committee formulate and if possible present a plan on October 20.

FONDA, JOHNSTOWN & GLOVERSVILLE.—*Reorganization Hearing Postponed.*—The public hearing in this company's reorganization case has been postponed by Division 4 of the Interstate Commerce Commission from May 8 to November 14. The hearing will be held before Examiners Harvey H. Wilkinson and R. A. Porterfield at the offices of the commission in Washington, D. C.

FONDA, JOHNSTOWN & GLOVERSVILLE.—*Annual Report.*—The annual report of this road for the year ended December 31, 1938, shows net deficit, after interest and other

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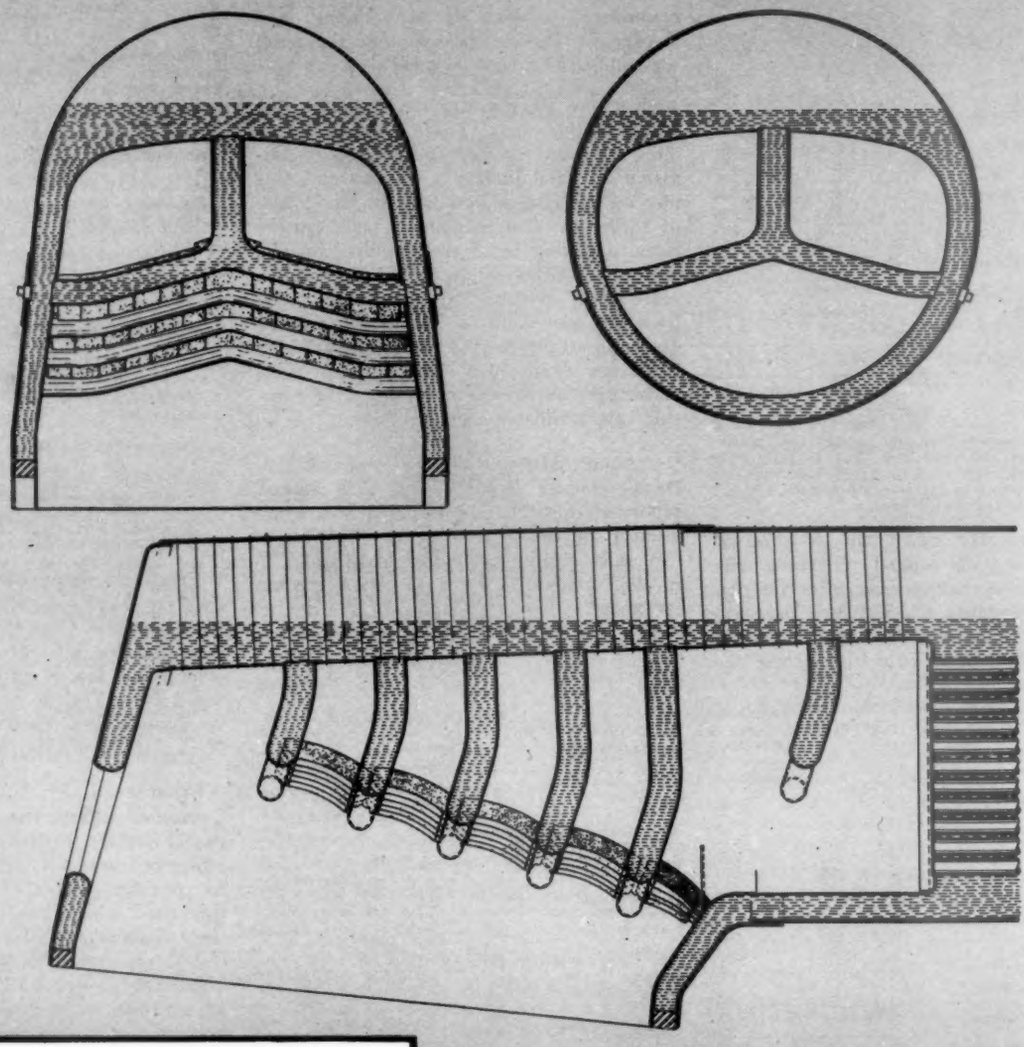
Announcing THE



Improved Arch Support for the largest fireboxes

Adapted to any type of locomotive

Reduced honeycombing flue plugging and cinder cutting

Improved circulation in side water legs

Patented in United States and foreign countries . . . Other patents pending.

AMERICAN

NEW YORK CHICAGO

SECURITY CIRCULATOR

AFTER 5 YEARS OF TESTING ON 12 RAILROADS

A number of years ago the increasing size of fireboxes started the American Arch Company engineers looking for a more satisfactory method of supporting arches of unusual length.

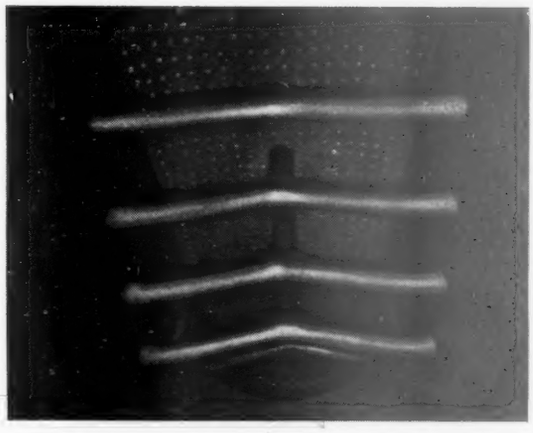
From this the Security Circulator has developed.

Now after 5 years of successful testing of over 100 Circulators in 22 locomotives, on 12 railroads, the American Arch Company announces Security Circulators for application to any type of steam locomotive.

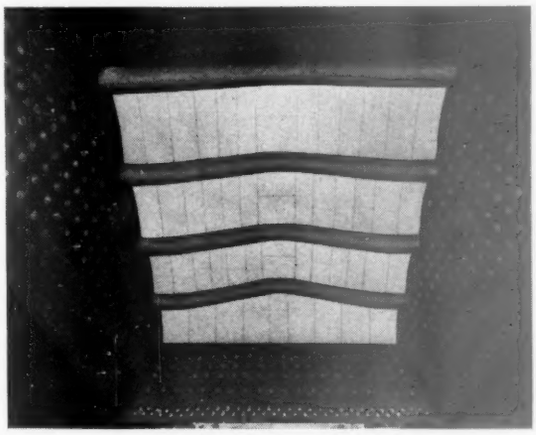
Test applications on every type of modern power under the worst water conditions have shown the Security Circulator to have the following advantages:

1. It supplies a better arch support; permitting the use of a 100% arch in any type of firebox.
2. It reduces honeycombing, flue plugging and cinder cutting.
3. It creates circulation in the side water legs.
4. It improves combustion.

Security Circulators have been so successful on test that we are now receiving many repeat orders.



View illustrating the positioning of Security Circulators in an average size of locomotive firebox prior to installing the brick arch.



Typical Security Circulator and brick Arch Installation in a locomotive firebox. The small sectional brick are as readily applied as in an ordinary arch tube firebox.

ARCH COMPANY, INC.

Security Circulator Division

charges, of $165,726, an increase of $26,592 over net deficit in 1937. Selected items from the income account follow:

	1938	Increase or Decrease Compared with 1937
Railway Operating Revenues	$445,681	−$102,688
Total Operating Expenses	410,939	−75,124
Net Revenue from Operations	34,742	−27,564
Railway tax accruals	48,122	−482
Railway operating income	*13,380	−27,082
Net rents—Dr.	1,803	−1,884
Net Railway Operating Income	*15,183	−25,198
Other income	29,738	−5,803
Total Income	14,555	−31,001
Rent for leased roads	6,843	+243
Interest on funded debt	137,820	−170
Total Fixed Charges	157,819	−2,804
Net Deficit	$165,726	+$26,592

* Deficit.

Great Northern.—*Annual Report.*—The 1938 annual report of this company shows net income, after interest and other charges, of $2,712,560, a decrease of $7,377,360 compared with net income in 1937. Selected items from the income account follow:

	1938	Increase or Decrease Compared with 1937
Railway Operating Revenues	$79,215,531	−$15,726,761
Total Operating Expenses	54,517,108	−6,860,615
Net Revenue from Operations	24,698,423	−8,866,146
Railway tax accruals	8,364,234	−60,929
Railway operating income	16,334,189	−8,805,217
Equipment rents—Net Dr.	1,479,331	+514,315
Joint facility rents—Net Dr.	375,582	−29,400
Net Railway Operating Income	14,479,276	−9,290,132
Other income	3,574,714	+334,332
Total Income	18,053,990	−8,955,800
Rent for leased roads and equipment	30,835	+5,305
Interest on funded debt	14,121,823	−1,449,664
Total Fixed Charges	14,273,364	−1,749,600
Net Income	$2,712,560	−$7,377,360

Illinois Central.—*R. F. C. Loan Extension.*—This road has applied for Interstate Commerce Commission approval of an extension to May 31, 1944, of Reconstruction Finance Corporation loans aggregating $35,170,000 which are due on May 31 and June 1.

Lehigh & Hudson River.—*New Director Elected.*—W. S. Franklin, traffic vice-president of the Pennsylvania, was elected a director of this road at the annual meeting, April 25, to succeed J. L. Eysmans, vice-president, assistant to president, Pennsylvania.

Lehigh & Hudson River.—*Annual Report.*—The 1938 annual report of this company shows net income, after interest and other charges, of $155,777, a decrease of $87,720 as compared with net income in 1937. Selected items from the income account follow:

	1938	Increase or Decrease Compared with 1937
Railway Operating Revenues	$1,493,949	−$156,999
Maintenance of way	147,114	−51,898
Maintenance of equipment	257,332	+5,400
Transportation	525,086	−39,192
Total Operating Expenses	1,049,925	−99,192
Operating ratio	70.3	+0.7
Net Revenue from Operations	444,024	−57,806
Railway tax accruals	170,081	+18,310
Hire of equipment	83,727	+5,108
Joint facility rents	61,995	−4,520
Net Railway Operating Income	128,218	−76,705
Other income	28,251	−11,078
Gross Income	156,470	−87,784
Total Deductions from Gross Income	693	−63
Net Income	$155,777	−$87,720

Louisville & Nashville.—*Annual Report.*—The 1938 annual report of this road shows net income, after interest and other charges, of $2,706,016, a decrease of $4,394,330 as compared with net income in 1937. Selected items from the income account follow:

	1938	Increase or Decrease Compared with 1937
Railway Operating Revenues	$79,394,560	−$10,800,433
Total Operating Expenses	61,008,799	−7,095,948
Operating ratio	76.8	+1.3
Net Revenue from Operations	18,385,761	−3,704,485
Railway tax accruals	7,114,734	−601,987
Railway operating income	11,271,027	−3,102,498
Equipment rents—Net Cr.	1,226,467	−916,823
Joint facility rents—Net Dr.	874,523	−91,171
Net Railway Operating Income	11,622,971	−3,928,150
Other income	877,387	−344,269
Interest on funded debt	9,148,432	−67,594
Other Fixed Charges	335,205	−25,345
Net Income	$2,706,016	−$4,394,330

New York Central.—*Abandonment Application Dismissed.*—Division 4 of the Interstate Commerce Commission has dismissed, at this company's request, its application to abandon a line extending from Wellsboro, Pa., to Antrim.

New York, New Haven & Hartford.—*Abandonment by the Old Colony.*—Division 4 of the Interstate Commerce Commission has authorized the trustees of the New York, New Haven & Hartford to abandon the operation and the trustees of the Old Colony to abandon the line extending from Greenbush station, Mass., to Kingston station, 14.2 miles. The permission was granted on the condition that the trustees will, within 60 days, sell all or any part of the line to any person, firm, or corporation offering to purchase it for continued operation and willing to pay for it not less than a fair net salvage value.

Norfolk Southern.—*Annual Report.*—The 1938 annual report of this road shows net deficit, after interest and other charges, of $489,408, an increase of $165,866 over 1937 net deficit. Selected items from the income account follow:

	1938	Increase or Decrease Compared with 1937
Average Mileage Operated	807.19	−26.08
Railway Operating Revenues	$4,378,085	−$493,129
Maintenance of way	811,072	−137,820
Maintenance of equipment	626,068	−24,523
Transportation	1,589,032	−110,960
Total Operating Expenses	3,591,817	−293,516
Net Revenue from Operations	786,267	−199,612
Railway tax accruals	400,515	+59,763
Railway operating income	385,751	−259,376
Equipment rents	144,391	+100,030
Joint facility rents	19,100	+2,822
Net Railway Operating Income	222,259	−156,522
Other income	177,739	−6,505
Gross Income	399,998	−163,027
Rent for leased roads	65,000	.....
Interest on funded debt	799,170	+6,336
Total Deductions from Gross Income	889,406	+2,839
Net Deficit	$489,408	+$165,866

Peoria & Eastern.—*Annual Report.*—The 1938 annual report of this company shows net income, after interest and other charges, of $129,810, a decrease of $26,234, as compared with net income in 1937. Selected items from the income account follow:

	1938	Increase or Decrease Compared with 1937
Average Mileage Operated	211.44	.....
Railway Operating Revenues	$2,314,670	−$261,643
Total Operating Expenses	1,858,339	−206,252
Operating ratio	80.29	+0.15
Net Revenue From Operations	456,330	−55,390
Railway tax accruals	174,084	−6,536
Railway operating income	282,245	−48,854
Equipment rents—Net Dr.	117,811	−19,885
Joint facility rents—Net Dr.	64,374	−832
Net Railway Operating Income	100,059	−28,136
Other income	38,970	−93
Total Income	139,030	−28,230
Total Deductions From Gross Income	9,219	−1,995
Net Income	$129,810	−$26,234

Pennsylvania.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon one mile of its Stevens Branch in Cambria County, Pa.

Pennsylvania.—*Abandonment of Operation by the Western Allegheny.*—The Western Allegheny has been author-

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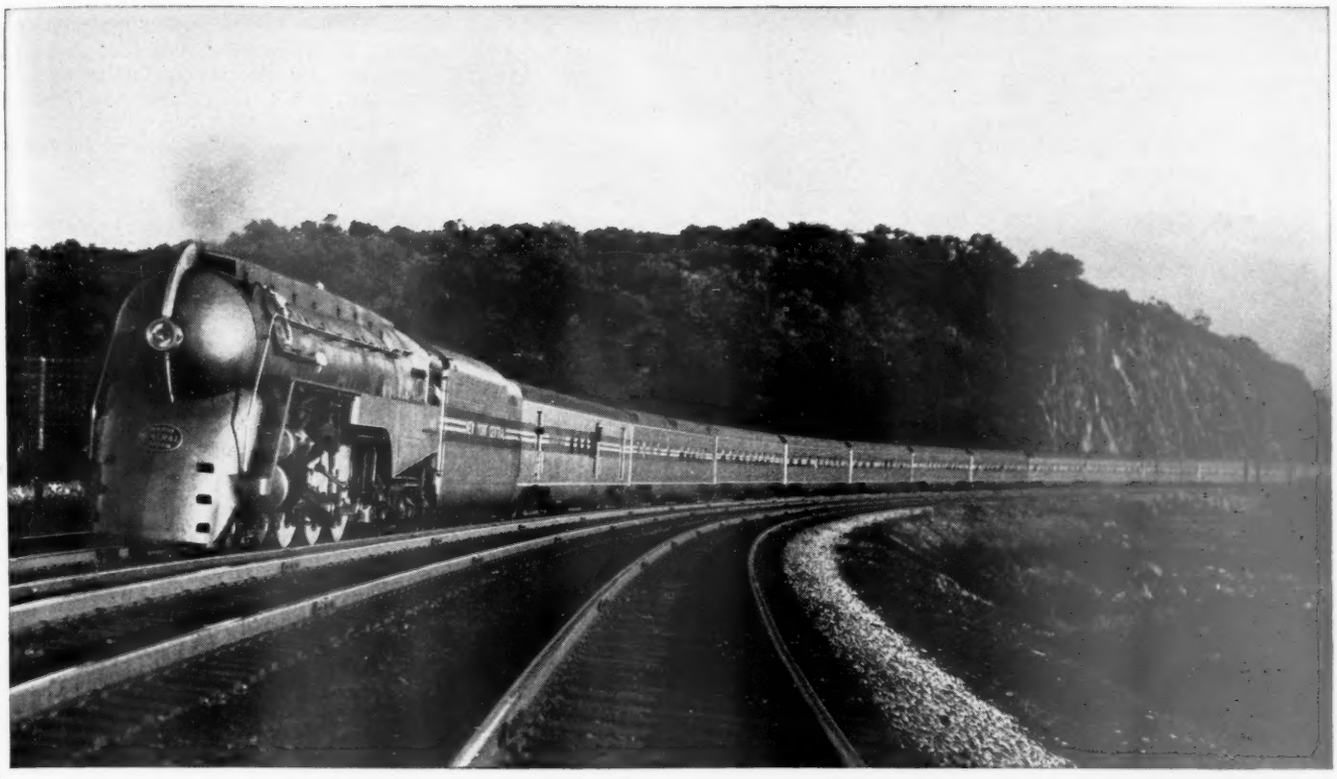

Comfort...Speed...On-Time Runs

of the
"TWENTIETH CENTURY"

with Booster* Power

Nothing has been left undone to give the Twentieth Century every luxury and every mechanical facility to promote comfort and speed.

The Locomotive Booster is among the important factors in obtaining these essentials. There is no jerking, no taking of slack as the "Century" pulls out of a station. The start is imperceptible. Smoothly and rapidly the train accelerates until the Booster cuts out and turns the work over to the main engine.

For those traveling on this famous train the Booster promotes riding comfort and helps maintain the fast operating schedule. Even though the "Century" encounters few grades, the Booster pays its way in good-will, in on-time runs and in the economical locomotive operation it makes possible. It protects the investment in de luxe equipment.

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FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK
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ized by Division 4 of the Interstate Commerce Commission to abandon the operation over that part of its main line extending from a connection with the Bessemer & Lake Erie at Queen Junction, Pa., to a connection with the Baltimore & Ohio at West Pittsburgh, 26.5 miles.

PITTSBURGH & WEST VIRGINIA.—*Annual Report.*—The 1938 annual report of this company shows net deficit, after interest and other charges, of $200,215, as compared with net income of $638,540 in 1937. Selected items from the income statement follow:

	1938	Increase or Decrease Compared with 1937
RAILWAY OPERATING REVENUES	$2,984,439	-$1,108,252
TOTAL OPERATING EXPENSES	2,323,374	-841,758
NET REVENUE FROM OPERATIONS	661,064	-266,494
Railway tax accruals	234,276	-14,996
Railway operating income	426,788	-251,497
Hire of freight cars—Net	213,889	-301,123
Joint facility rents—Net	25,509	+162
NET RAILWAY OPERATING INCOME	627,862	-514,928
Other income	97,658	-306,557
GROSS INCOME	725,521	-821,486
Interest on funded debt	781,005	-70,556
TOTAL DEDUCTIONS FROM GROSS INCOME	925,736	+17,268
NET INCOME	*$200,215	-$838,755

* Deficit.

RICHMOND, FREDERICKSBURG & POTOMAC.—*Annual Report.*—The 1938 annual report of this road shows net income, after interest and other charges, of $515,310, a decrease of $464,962 as compared with net income in 1937. Selected items from the income statement follow:

	1938	Increase or Decrease Compared with 1937
RAILWAY OPERATING REVENUES	$7,754,108	-$849,112
Maintenance of way	775,019	-99,827
Maintenance of equipment	1,528,133	-107,674
Transportation	3,146,495	-24,331
TOTAL OPERATING EXPENSES	6,060,527	-276,282
NET REVENUE FROM OPERATIONS	1,693,581	-572,830
Railway tax accruals	628,208	-58,861
Railway operating income	1,065,372	-513,969
Hire of equipment—Dr.	397,340	-19,843
Joint facility rents—Dr.	33,027	-26,563
NET RAILWAY OPERATING INCOME	635,005	-467,562
Other income	220,105	+14,378
GROSS INCOME	855,111	-453,183
Interest on funded debt*	314,989	+3,854
TOTAL DEDUCTIONS FROM GROSS INCOME	339,800	+11,779
NET INCOME	$515,310	-$464,962

* Includes interest on 6 per cent and 7 per cent guaranteed stock.

ST. LOUIS-SAN FRANCISCO.—*Annual Report.*—The 1938 annual report of this company shows net deficit, after interest and other charges, of $11,532,950 as compared with net deficit of $7,930,109 in 1937. Selected items from the consolidated income account follow:

	1938	Increase or Decrease Compared with 1937
Average Mileage Operated	5,264.64	-66.59
RAILWAY OPERATING REVENUES	$45,107,542	-$6,111,393
Maintenance of way	7,321,405	-475,936
Maintenance of equipment	7,718,420	-733,804
Transportation	17,973,361	-2,103,751
TOTAL OPERATING EXPENSES	39,805,192	-3,389,152
Operating ratio	88.25	+3.92
NET REVENUE FROM OPERATIONS	5,302,350	-2,722,241
Railway tax accruals	3,901,409	+588,956
Hire of equipment—Net	35,201	+345,396
Joint facility rents—Net	230,568	+1,265
NET RAILWAY OPERATING INCOME	1,135,170	-3,657,859
Other income	177,686	-4,418
GROSS INCOME	1,312,857	-3,662,277
TOTAL DEDUCTIONS FROM GROSS INCOME	70,969	+6,897
NET DEFICIT	$11,532,950	+$3,602,841

SOUTHERN.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon its Embreeville branch extending from a connection with its Bristol-Knoxville line at Embreeville Junction, Tenn., in a southwesterly direction to Embreeville, 13 miles.

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS.—*Annual Report.*—The 1938 annual report of this association shows net deficit, after interest and other charges, of $976,349, an increase of $521,801 over net deficit in 1937. Selected items from the income account follow:

	1938	Increase or Decrease Compared with 1937
RAILWAY OPERATING REVENUES	$7,174,863	-$1,163,003
Maintenance of way	890,995	-183,708
Maintenance of equipment	540,142	-155,538
Transportation—Rail	3,546,229	-290,856
TOTAL OPERATING EXPENSES	5,181,930	-650,129
Operating ratio	72.22	+2.27
NET REVENUE FROM OPERATIONS	1,992,932	-512,873
Railway tax accruals	1,332,002	+90,033
Railway operating income	660,929	-602,907
Net rents	679,977	-10,112
NET RAILWAY OPERATING INCOME	1,340,907	-613,020
Other income	922,409	+97,119
TOTAL INCOME	2,263,316	-515,900
Rent for leased roads and equipment	761,390	+10,236
Interest on funded debt	1,953,266	-4,868
NET DEFICIT	$976,349	+$521,801
TOTAL FIXED CHARGES	2,806,833	+5,944

UNION PACIFIC. — *Abandonment of Steamboat Operation.*—The Oregon-Washington Railroad & Navigation Company has applied to the Interstate Commerce Commission for authority to abandon its freight steamboat operation on Snake river between Rice's Bar, Wash., and Couse Creek, 69 miles.

UNION PACIFIC.—*Annual Report.*—The 1938 annual report of this road shows net income, after interest and other charges, of $18,701,233, an increase of $1,045,717 compared with 1937 net income. Selected items from the income account follow:

	1938	Increase or Decrease Compared with 1937
Average Mileage Operated	9,907.52	-6.30
RAILWAY OPERATING REVENUES	$150,213,214	-$11,851,096
Maintenance of way	16,354,100	-1,371,259
Maintenance of equipment	26,413,538	-3,895,687
Transportation—Rail	50,282,801	-4,375,034
TOTAL OPERATING EXPENSES	105,731,151	-11,103,427
Operating ratio	70.39	-1.70
NET REVENUE FROM OPERATIONS	44,482,062	-747,669
Total taxes	15,293,994	+2,049,834
Railway operating income	29,188,068	-2,797,503
Equipment rents—Dr.	8,644,167	+81,273
Joint facility rents—Dr.	676,509	+140,091
NET RAILWAY OPERATING INCOME	19,867,391	-3,018,868
Other income	13,623,344	+3,986,932
TOTAL INCOME	33,490,736	+968,064
Interest on funded debt	14,263,258	+75,094
TOTAL FIXED CHARGES	14,789,502	-77,653
NET INCOME	$18,701,233	+$1,045,717

WABASH.—*Annual Report.*—The 1938 annual report of this company shows net deficit, after interest and other charges, of $6,127,890, an increase of $3,076,098 over net deficit in 1937. Selected items from the income statement follow:

	1938	Increase or Decrease Compared with 1937
Average Mileage Operated	2,429.60	-7.28
RAILWAY OPERATING REVENUES	$40,472,327	-$5,661,407
Maintenance of way	4,922,279	-1,117,553
Maintenance of equipment	7,119,549	-1,214,547
Transportation—Rail	16,804,310	-1,063,748
TOTAL OPERATING EXPENSES	32,454,520	-3,375,162
NET REVENUE FROM OPERATIONS	8,017,806	-2,286,244
Railway tax accruals	2,603,355	+149,873
Railway operating income	5,414,450	-2,436,117
Net rents	4,116,960	+514,248
NET RAILWAY OPERATING INCOME	1,297,489	-2,950,366
Other income	354,701	-67,503
TOTAL INCOME	1,652,191	-3,017,870
Rent for leased roads and equipment	431,301	+67,003
Interest on funded debt	6,322,823	-478,381
TOTAL FIXED CHARGES	7,679,814	+65,235
NET DEFICIT	$6,127,890	+$3,076,098

WABASH.—*R. F. C. Loan and Financing.*—Division 4 of the Interstate Commerce Commission has approved (1) a loan of $7,500,000 by the Reconstruction Finance Corporation to this company for a specified purpose, or (2) a purchase by the R. F. C. at a price not exceeding par, of $7,500,000 of this company's equipment trust obligations, or (3) a loan of part of an amount not exceeding $7,500,000 by the

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Machine-die-forging is used exclusively to form return bends and ball ends on Elesco superheater units.

The process is employed in both the manufacture of new units and the REmanufacture of old superheater units.

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Superheaters
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THE
SUPERHEATER
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Representative of AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street, NEW YORK
122 S. Michigan Ave., CHICAGO
Canada: THE SUPERHEATER COMPANY, LTD.
MONTREAL

R. F. C. and a purchase at a price not exceeding par, of the remaining part of such amount of not exceeding $7,500,000 of this company's equipment trust obligations. The purpose of the financing is to consolidate all of the company's equipment trust obligations into one issue.

WHEELING & LAKE ERIE.—*Annual Report.*—The 1938 annual report of this company shows net income, after interest and other charges, of $1,693,927, a decrease of $2,041,539 compared with net income in 1937. Selected items from the income account follow:

	1938	Increase or Decrease Compared with 1937
Average Mileage Operated	510	–2.07
RAILWAY OPERATING REVENUES	$10,981,730	–$4,989,108
TOTAL OPERATING EXPENSES	8,087,849	–3,084,444
Operating ratio	73.65	+3.70
NET REVENUE FROM OPERATIONS	2,893,880	–1,904,665
Railway tax accruals	1,297,206	–454,692
Railway operating income	1,596,673	–1,449,974
Net rents—Cr.	587,886	–587,689
NET RAILWAY OPERATING INCOME	2,184,560	–2,037,662
Other income	146,164	–18,187
TOTAL INCOME	2,330,725	–2,055,848
Interest on funded debt	622,027	–12,318
TOTAL FIXED CHARGES	629,318	–7,801
NET INCOME	$1,693,927	–$2,041,539

WESTERN MARYLAND.—*Annual Report.*—The 1938 annual report of this company shows net income, after interest and other charges, of $455,461, a decrease of $1,347,675 as compared with net income in 1937. Selected items from the income account follow:

	1938	Increase or Decrease Compared with 1937
RAILWAY OPERATING REVENUES	$13,625,663	–$4,000,605
TOTAL OPERATING EXPENSES	9,272,622	–2,305,799
Operating ratio	68.05	+2.36
NET REVENUE FROM OPERATIONS	4,353,041	–1,694,806
Railway tax accruals	842,569	–278,377
Railway operating income	3,510,472	–1,416,428
Hire of equipment—Net	268,570	+10,787
NET RAILWAY OPERATING INCOME	3,643,433	–1,383,812
Other income	128,453	+17,498
GROSS INCOME	3,771,886	–1,366,313
Rent for leased roads	542,463	–190
Interest on funded debt	2,664,001	–4,918
TOTAL DEDUCTIONS FROM GROSS INCOME	3,316,425	–18,638
NET INCOME	$455,461	–$1,347,675

Dividends Declared

Norfolk & Western.—$2.50, quarterly, payable June 19 to holders of record May 31.

Reading Company.—First Preferred, 50¢, quarterly, payable June 8 to holders of record May 18.

Average Prices of Stocks and Bonds

	Apr. 25	Last week	Last year
Average price of 20 representative railway stocks..	26.57	26.29	22.87
Average price of 20 representative railway bonds..	57.91	57.71	55.30

Railway Officers

EXECUTIVE

Heads of departments now reporting to the executive vice-president of the Atlantic Coast Line will, effective May 1, report to **C. McD. Davis,** vice-president, Wilmington, N. C.

Harry C. Weller, resident vice-president of the Norfolk & Western, with headquarters at Norfolk, Va., will retire on May 1, after 53 years of active service with this company. Mr. Weller was born in Bainbridge, Ross county, Ohio, and at the age of 17 entered the service of the

Harry C. Weller

Norfolk & Western at Chillicothe, Ohio, as telegraph operator. After nine years in that capacity, he was promoted to dispatcher, and in 1905, was appointed assistant trainmaster on the Scioto division. Mr. Weller was promoted in January, 1908, to terminal trainmaster at Bluefield, W. Va., and then served successively as trainmaster and superintendent of the Pocahontas division, and superintendent of the Scioto division. He was appointed general superintendent of the Western General division on February 16, 1923, with headquarters at Bluefield, and served in that capacity until his appointment as resident vice-president at Norfolk on October 1, 1934.

OPERATING

Joseph Davis, superintendent of the Arkansas division of the Missouri Pacific has been promoted to general superintendent of the Western district, to succeed **John W. Rea,** who retires on May 1. **R. C. Williams,** superintendent of the Illinois division, the St. Louis Terminal division and that section of the Missouri-Illinois lying east of the Mississippi river, succeeds Mr. Davis; **C. W. Exline,** assistant superintendent of the Memphis division succeeds Mr. Williams; **V. C. Halpin,** division engineer of the Missouri and Memphis divisions succeeds Mr. Exline; **R. M. Smith,** assistant superintendent of the Colorado division succeeds Mr. Halpin; **L. L. Lowe,** trainmaster of the Arkansas division's Hoxie and Doniphan districts, succeeds Mr. Smith; **W. A. Catlett,** trainmaster of the Memphis division succeeds Mr. Lowe; and **E. W. Hargrave,** assistant to the general superintendent at Little Rock, succeeds Mr. Catlett.

Charles M. Connor, whose appointment as superintendent transportation of the Western Maryland at Hagerstown, Md., was noted in the *Railway Age* of April 22, was born on September 5, 1891, at Baltimore, Md. He attended the public schools of Baltimore and Baltimore City College and entered railroad service on August 5, 1907, with the Baltimore & Ohio in the car service department at Baltimore. Mr. Connor went with the Western Maryland as clerk on January 2, 1911, and served in the car service department at Baltimore and as chief clerk to superintendent transportation. On September 16, 1937, he became chief clerk to the superintendent of the Hagerstown division.

FINANCIAL, LEGAL AND ACCOUNTING

H. K. Pinkney, acting treasurer of the Peoria & Pekin Union, with headquarters at Peoria, Ill., has been elected treasurer.

F. P. Briscoe, special accountant in charge of the general accounts of the Union Pacific system in the general auditors office at Omaha, Neb., has been promoted to auditor of general and station accounts, with headquarters at Omaha, succeeding **W. S. Ure,** whose promotion to assistant treasurer, with headquarters at Omaha, was announced in the *Railway Age* of April 22.

TRAFFIC

E. T. Parks, assistant general freight agent on the Chicago, Burlington & Quincy, with headquarters at Chicago, has been transferred to Omaha, Neb., succeeding **G. R. Glover,** whose promotion to general freight agent, with headquarters at Denver, Colo., was announced in the *Railway Age* of April 15, and **J. T. Baldwin,** chief clerk in the "divisions" department at Chicago, has been promoted to assistant general freight agent at that point replacing Mr. Parks.

Richard J. Sullivan has been appointed general agent of the New York, Ontario & Western, with headquarters at Boston, Mass., to succeed **J. L. Carr,** promoted. **M. J. Armstrong,** general agent, with headquarters at New Haven, Conn., and **J. M. Tone,** general traffic agent at New Haven, have been granted a leave of absence until July 1, 1939, upon which date they will resign from the employ of the New York, Ontario & Western. The position of general traffic agent at New Haven has been abolished. **F. J. Kinney** has been appointed general agent, with headquarters at New Haven, to succeed Mr. Armstrong. The New Haven office has been moved from 39 Church street to Room 701 Powell building, 157 Church street, in that city.

William Humphreys, assistant freight

Continued on next left-hand page

On the Majority of Power Which Pulls Out of Los Angeles New Station

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All types of modern power will be represented among the prime movers which will use this magnificent terminal.

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Finished Parts
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Duplex Sectional Type Packing
for Cylinders and Valves
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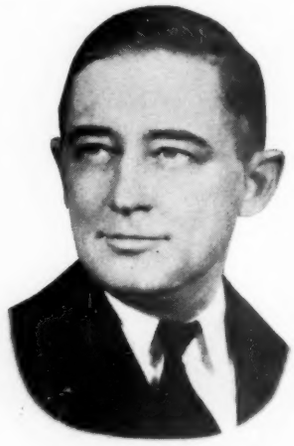
traffic manager of the Southern, with headquarters at Memphis, Tenn., will be retired at his own request on May 1, after more than 40 years of service. **R. N. Woodall** has been appointed general agent, freight and passenger departments, with headquarters at Pittsburgh, Pa., succeeding **J. J. Rutledge,** who has been appointed district freight and passenger agent at Evansville, Ind. **W. C. Raper** has been appointed coal freight agent, with headquarters at Atlanta, Ga. **A. C. Diven** has been appointed district freight agent and **C. D. Whitworth** has been appointed district passenger agent, both at Cleveland, Ohio. **F. C. Toal,** commercial agent at Atlanta, has been appointed general agent, freight and passenger departments, at Cleveland. The above appointments are effective May 1.

Ernest J. Carr, whose promotion to assistant traffic manager on the Illinois Central, with headquarters at St. Louis, Mo., was announced in the *Railway Age* of April 22, was born in Chicago on July 9, 1896, and entered railway service on June 21, 1912, as an office boy in the operating department of the Illinois Central at Chicago. He later became successively a stenographer, accountant and secretary and in July, 1925, he became secretary to Mr. Markham, who at that time was president of the Illinois Central system and chairman of the board of the Central of Georgia. After Mr. Markham's death in November, 1930, Mr. Carr served in the traffic department and was appointed chief clerk to the vice-president in December, 1932. In February, 1934, he was promoted to office manager and two years later he was advanced to general traffic agent at Omaha, Neb. He was transferred to Birmingham, Ala., in September, 1937, holding that position until his recent promotion, which is effective May 1.

Ernest J. Carr

Robert W. Quindley, whose promotion to general freight agent on the Illinois Central, with headquarters at Memphis, Tenn., was announced in the *Railway Age* of April 22, was born at Little Rock, Ark., on July 17, 1889, and studied law at the University of Arkansas and the Memphis University Law School, graduating from the latter institution in 1913. He entered railway service on July 5, 1911, as a tariff clerk in the general freight office of the Illinois Central at Memphis, Tenn., and in 1912, he was promoted to general clerk. On May 15, 1915, he was advanced to city freight agent and in December of that year he was appointed traveling freight agent, with headquarters at Vicksburg, Miss. On January 1, 1917, he was transferred to Memphis in the same capacity. He later subsequently served in the Memphis general freight office as chief rate and tariff clerk and chief clerk. Mr. Quindley was promoted to assistant general freight agent at Memphis in 1926, and on March 1, 1934, he was appointed general cotton agent with the same headquarters. His promotion to general freight agent is effective on May 1.



Robert W. Quindley

SPECIAL

Charles A. Gillett has been appointed industrial forester of the Seaboard Air Line, with headquarters at Norfolk, Va., succeeding **A. E. Wackerman,** who has resigned to accept a position with the School of Forestry, Duke University, Durham, N. C.

OBITUARY

Wallace S. King, general tie and timber agent of the Chesapeake & Ohio, the Nickel Plate and the Pere Marquette, with headquarters at Cleveland, Ohio, died in Richmond, Va., on April 14 following a heart attack.

David T. G. Smith, assistant superintendent of telegraph of the Missouri Pacific, with headquarters at St. Louis, Mo., died in the Missouri Pacific hospital in that city on April 17, his sixtieth birthday. Mr. Smith had been recovering from a two months illness of pneumonia.

M. J. Hayes, master mechanic of the Toronto, Hamilton & Buffalo, with headquarters at Hamilton, Ont., died at Atlanta, Ga., on April 8, while enroute home from Florida. Due to a typographical error this road was erroneously reported in the *Railway Age* of April 22 as the Trenton, Hamilton & Buffalo.

Everett E. Cain, assistant to the vice-president of the Pere Marquette, with headquarters at Detroit, Mich., whose death in that city on April 19, was announced in the *Railway Age* of April 22, was born at Dublin, Ind., on February 4, 1867, and entered railway service in 1888 as an agent and operator on the Wabash. He later served successively the Missouri Pacific, the St. Louis Southwestern and the Denver & Rio Grande Western in the same capacity. In 1893, he returned to the Missouri Pacific as a clerk and he later served as a brakeman, dispatcher and chief dispatcher. In 1903, he was promoted to chief clerk to the superintendent of transportation and on December 20, 1904, he went with the Pere Marquette as a trainmaster. In 1910, he became superintendent of the Cincinnati, Hamilton & Dayton (now part of the B. & O.) and two years later he returned to the Pere Marquette as a superintendent. Mr. Cain was promoted to general superintendent in 1920, and to assistant to the president and general manager in 1923. In 1929, he was appointed assistant to the vice-president, the position he held at the time of his death.

Frank D. Reed, purchasing agent of the Chicago, Rock Island & Pacific, with headquarters at Chicago, died at his home in that city on April 23, after a long illness. Mr. Reed was born at Fort Dodge, Iowa, on April 22, 1868, and entered railway service in 1884 as a wheel inspector in the Chicago shops of the Pennsylvania. In 1892, he became chief clerk in the car department at that point and three years later he was promoted to assistant chief motive power accountant, with headquarters at Fort Wayne, Ind. Mr. Reed was advanced to chief motive power accountant, with the same headquarters in 1900, and in 1904, he went with the Rock Island as chief motive power clerk at Chicago. He was promoted to general storekeeper, with headquarters at Silvis, Ill., in 1906, and four years later he was advanced to assistant to the vice-president in charge of purchasing. In 1911, he was appointed assistant to vice-president and purchasing agent and in 1915, his title was changed to general purchasing agent. Mr. Reed was elected vice-president and general purchasing agent in 1920 and held that title until 1934, when he was appointed purchasing agent.

Frank D. Reed